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Vol. VI No. 3

THE NEW SCHOLASTICISM

A QUARTERLY REVIEW OF PHILOSOPHY

JULY, 1932

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II. The Universe Around Us.....C. WILLIAMSON

III. BOOK REVIEWS

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IV. CURRENT PHILOSOPHICAL REVIEWS AND BOOK NOTES

CATHOLIC UNIVERSITY PRESS
PUBLISHERS

EUROPEAN REPRESENTATIVE
A. LORENTZ
KURPRINZSTRASSE, 10, LEIPZIG, GERMANY

SINGLE COPIES $1.00 PER ANNUM $4.00

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EDITED BY

EDWARD A. PACE AND JAMES H. RYAN

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Business communications, including subscriptions and changes of address, may be addressed to the Catholic University Press, 12-20 Hopkins Place (Rouse Building), Baltimore, Md., or to The New Scholasticism, Box 176, Catholic University of America, Washington, D. C.

Address communications concerning articles, reviews, and all matters of editorial policy and work to The Editors, The New Scholasticism, Catholic University of America, Washington, D. C.

European Agents: A. Lorentz, Kurprinzstrasse, 10, Leipzig, Germany.

Published by

CATHOLIC UNIVERSITY PRESS, 12-20 Hopkins Place (Rouse Building), Baltimore, Md.

EDITORIAL OFFICES: Catholic University, Washington, D. C.

Printed by J. H. FURST Co., Baltimore, Md.

Entered as second-class matter December 13, 1926, at the Postoffice at Baltimore, Md., under the Act of March 3, 1879.

THE
NEW SCHOLASTICISM
A Quarterly Review of Philosophy

Volume VI JULY, 1932 Number 3

NOTES EXÉGETIQUES SUR LA THÉORIE ARISTOTÉLICIENNE DU *SENSUS COMMUNIS*

L'EXPRESSION αἴσθησις κοινή ne se rencontre qu'une seule fois dans le *De Anima*,[1] mais elle résume commodément, en sa brêve formule une série d'aperçus doctrinaux ça et là dispersés dans l'ensemble des ouvrages psychologiques d'Aristote et dont nous voudrions déterminer le sens exact. A vrai dire, il n'est pas impossible de trouver une raison à cette prudence dans le maniement d'une formule en apparence excellente; on sait que pour Aristote il n'y a pas d'autre sens que les cinq sens connus; [2] or, le terme αἴσθησις est amphibologique, désignant à

[1] *De An.*, Γ, 1, 425 a 27.

[2] *Ibid.*, 424 b 22-425 a 13. Voici la signification de ce passage difficile sur lesquel les commentateurs ont éprouvé leur ingéniosité. L'argumentation se developpe d'une façon très sinueuse, de telle sorte qu'il est nécessaire de placer quelques points de repère:

A. *Etablissement de la question:* il n'y a pas de sens en dehors des cinq sens connus; en effet, aucun sens ne saurait manquer à un animal achevé en perfection (b 22-23, a 11-13, a 4-10).

B. *Argumentation:* 1°) Si chacun des sens dont nous disposons perçoit la *totalité* des qualités sensibles qu'il est capable de percevoir, pareil fait implique comme nécessaire que l'absence d'une sensation donnée entraine en nous l'absence d'un organe sensible donné. Aristote n'énonce pas la chose sous cette forme universelle; mais il la condense dans un exemple, celui du toucher. 2°) Or, deux cas se présentent: la sensation est immédiate ou elle est médiate. Dans le cas du toucher où la sensation est immédiate, il est clair que nous percevons par ce sens *toutes* les qualités

la fois le sens et la sensibilité qui en est la caractéristique foncière; l'expression *αἴσθησις κοινή*, dans sa signification obvie, revêt dès lors, dans la théorie aristotélicienne du *sensus communis*, une ambiguité qui la fausse radicalement, en hypostasiant en quelque sorte dans le langage une réalité dont l'existence, loin de s'isoler indépendamment à la façon d'un sixième sens, imbibe au contraire les cinq sens dont est pourvu tout être animé achevé en perfection. Au contraire, dès qu'il s'agit, non plus du *sensus communis* pris comme sujet, mais de l'objet de cette sensibilité générale, Aristote affectionne l'expression *ἀισθητὸν*

tangibles (on ne conçoit pas qu'une qualité tangible, c'est-à-dire susceptible d'être atteinte par le toucher, ne soit pas susceptible d'être atteinte par le toucher). Dans le cas des autres sens, la possibilité de l'exercice de la sensation dépend du milieu intermédiaire entre l'organe et l'objet. Or, ce milieu est constitué par un élément, tel l'air ou l'eau. Pour que nous percevions toutes les sensations autres que celles du toucher, il faut donc qu' *étant donnée l'existence de milieux uniquement formés d'air on d'eau* (la restriction exprimée en a 11-12 l'indique), l'organe percepteur soit immédiatement apte à saisir les images transmises par ces milieux, c'est-à-dire qu'il admette la même composition matérielle que ces milieux. Ce dernier point est prouvé par Aristote à partir de b 31 jusqu'à a 11, de deux façons: a) déductivement et abstraitement (b 31 - a 2) b) inductivement et expérimentalement, en montrant qu'en fait les deux seuls éléments qui constituent les milieux sont aussi les deux seuls qui constituent les organes. "Or, c'est un fait que ces organes sont possédés par certains animaux. Nous pouvons en inférer que tous les sens sont en la possession des animaux parvenus à leur complet développement et dépourvus de défauts: l'observation ne montre-t-elle pas que la taupe elle-même a des yeux sous la peau? Ainsi donc, à moins qu'il n'existe un corps inconnu ou une propriété distincte de celles qu'on reconnait aux corps d'ici-bas, aucun sens ne saurait nous manquer." Simplicius (174, 38) prétend à tort la démonstration d'Aristote est purement abstraite et ne repose aucunement sur l'expérience, ainsi que l'ont admis Yamblique, Philopon (449, 18) et Alexandre (*Ἀπορίαι καὶ λύσεις*, III, 6; 90, 4). *Νῦν* (a 9) indique toujours chez Aristote, en dehors de sa signification temporelle, un recours à l'expérience; ce dernier est aussi marqué par *φαίνεται* (a 10). Le principe du raisonnement d'Aristote n'est pas, comme l'estime Bonitz (*Aristot. Studien*, II-III, p. 36 sqq.) le suivant: "l'âme de l'animal est essentiellement *αἰσθητική*; par suite, elle est apte à saisir tous les sensibles et, si quelques uns d'entre eux lui échappent, ce ne peut être que faute d'un organe (cf. Rodier, II, p. 343), mais bien: "toutes les propriétés connues des corps connus sont saisies par la sensation, soit directement, soit indirectement". Dès lors, puisque tout ce qui est sensible ici bas (*ἐνταῦθα*) est perçu par nous, aucun sens ne nous

κοινόν dont l'emploi est courant dans son œuvre : [3] toute ambiguité est ici écartée, car les objets du *Sensus Communis* se distinguent normalement des objets propres aux sens particuliers.

Conformément à sa doctrine de la priorité de l'objet,[4] Aristote définit d'abord ce qu'il entend par sensibles communs. Ce sont des sensibles qui sont perçus καθ' αὑτά; [5] ils ne semblent différer aucunement sur ce point des sensibles particuliers relatifs à chacun des cinq sens. Ils ne sont toutefois dits sensibles que par extension de la signification de ce mot : à strictement parler (κυρίως), sont seuls sensibles les sensibles propres auxquels est naturellement relative la structure essentielle (ἡ οὐσία) de chaque sens.[6] Les sensibles communs, au contraire, ne sont pas l'objet exclusif d'un sens quelconque, mais sont communs à tous (κοινὸν πασῶν) : tels sont le mouvement, le repos, le nombre, la figure et la grandeur, liste qu' Aristote complète dans le *De Sensu* par le poli et le rugueux, l'aigu et l'obtus, εἰ δὲ μὴ πασῶν, ἀλλ' ὄψεώς γε καὶ αφῆς,[7] et, dans un passage subséquent du *De Anima*, par l'unité.[8] Comment sont-ils perçus ? Par coincidence (κατὰ συμβεβηκός) avec la perception propre à chacun des sens particuliers dont la sensibilité générale et diffuse, prise comme arrière-fond d'où émane leur activité

manque. D'autre part, puisqu'aucun sens ne nous manque, nous ne pouvons posséder aucun autre sens distinct des cinq sens que l'analyse physiologico-psychologique reconnait en nous. Quant à l'objection de Théophraste (*apud* PRISCIEN, 19, 22) se demandant pourquoi Aristote suppose que l'air et l'eau peuvent seuls remplir le rôle de milieux, elle ne porte pas, car il est clair qui si, dans l'esprit de la psycho-physique aristotélicienne, les organes sensibles sont uniquement formés d'eau et d'air, pour qu'il y ait continuité parfaite (et donc perception) entre l'objet sensible et l'organe, il faut que le milieu ait une composition analogue à celle de l'organe. D'ailleurs, Aristote n'a aucunement l'intention de fournir une argumentation rigoureuse, ainsi que le témoigne ἐκ τούτων πιστεύσειεν ἄν τις (b 3). Πίστις signifie simplement chez lui la *persuasionis firmitas* (cf. *Ind. Arist.*, 595 b 8).

[3] *De An.*, B, 6, 418 a 10; a 17; a 19; Γ, 1, 425 a 14; a 27; 425 b 10. *De Sens.*, 1, 437 a 8; 4, 442 b 5; *De Mem.*, 1, 450 a 9 sq.; etc.

[4] *De An.*, B, 4, 415 a 20 : εἰ οὕτως, τούτων δ' ἔτι πρότερα τὰ ἀντικείμενα δεῖ τεθεωρηκέναι, et B, 6, 418 a 7 : λεκτέον δὲ . . . περὶ τῶν αἰσθητῶν πρῶτον.

[5] *De An.*, B, 6, 418 a 9.

[6] *De An.*, B, 6, 418 a 25.

[7] *De Sens.*, 4, 442 b 5.

[8] *De An.*, Γ, 1, 425 a 16.

spécialisé, constitue précisément le *sensus communis.*[9] Les sensibles communs sont ainsi perçus grâce à l'activité antécédente des organes sensibles spéciaux (ce qui entraîne comme conséquence l'inutilité d'un organe sensible spécialisé dans la perception des sensibles communs et où siégerait le *sensus communis*). Καθ' αὑτά ne signifie donc pas comme le veut Hicks[10] *directly*, par opposition à κατὰ συμβεβηκός, lequel signifierait *indirectly*. Sans doute, la perception des sensibles accidentels, telle la perception de cette masse blanche coïncidant fortuitement avec le fils de Diarès, s'effectue-t-elle toujours de manière indirecte, par une sorte de glissement oblique de la sensation,[11] mais il en est de même de la perception des sensibles communs; l'opposition qu' Aristote trace entre les sensibles propres et communs, καθ' αὑτά à un titre identique, et les sensibles accidentels κατὰ συμβεβηκός ne se justifierait donc plus. En réalité, Aristote est loin d'attribuer à καθ' αὑτά une signification aussi exclusivement physique: parlant de l'objet coloré, il le dit καθ' αὑτό ὁρατόν et précisé aussitôt: καθ' αὑτὸ δὲ οὐ τῷ λόγῳ, ἀλλ' ὅτι ἐν ἑαυτῷ ἔχει τὸ αἴτιον τοῦ εἶναι ὁρατόν.[12] Καθ' αὑτά n'a aucune signification logique, comme dans les *Analytiques,*[13] il désigne des objets portant en eux-mêmes la condition de leur perceptibilité. On aperçoit ainsi la différence fondamentale qui sépare le sensible κατὰ συμβεβηκός qui ne cause qu'occasionnellement et indirectement sa perception, le sensible commun qui la cause indirectement mais, en vertu de sa nature intrinsèque. Saint Thomas avait déjà souligné la difficulté: "*Dubitatur autem hic de distinctione sensibilium communium a sensibilibus per accidens. Sicut enim sensibilia per accidens non apprehenduntur nisi in quantum sensibilia propria apprehenduntur, sic*

[9] *Ibid.*, a 15.

[10] *De Anima* (Cambridge, 1907), p. 360.

[11] *De An.*, B, 6, 418 a 20 sqq.

[12] *De An.*, B, 7, 418 a 30.

[13] *An. Post.*, A, 4, 73 a 34: καθ' αὐτὰ δ' ὅσα ὑπάρχει τε ἐν τῷ τί ἐστιν . . . καὶ ὅσοις τῶν ἐνυπαρχόντων αὐτοῖς αὐτὰ ἐν τῷ λόγῳ ἐνυπάρχουσι τῷ τί ἐστι δηλοῦτι.

nec sensibilia communia apprehenduntur, nisi apprehendantur sensibilia propria: nunquam enim visus apprehendit magnitudinem aut figuram, nisi inquantum apprehendit coloratum. Videtur ergo quod sensibilia communia sunt etiam sensibilia per accidens." [14] Aristote lui-même l'avait pressenti, mais la tentative de dissiper la confusion se trouve en fait bloquée dans une démonstration qu'il trace de l'inexistence d'un organe propre au *sensus communis*, de telle sorte que les lignes de cette double argumentation s'entrecroisent, et engendrent ainsi une certaine obscurité.[15] " Il est impossible ", nous dit-il, " qu'il existe un sens spécial pour les sensibles communs que chaque sens nous fait percevoir par coincidence avec sa propre sensation." [15] Tous ces sensibles communs, nous les percevons *κινήσει*, c'est-à-dire non pas grâce " à un mouvement mental qu' Aristote

[14] *In Arist. libr. de anima Comm.*, lib. II, lect. XIII, § 388, p. 136, éd. Pirotta.

[15] *De An.*, Γ, 1, 425 a 20 sqq.

[16] *Ibid.*, a 14-15: *ἀλλὰ μὴν οὐδὲ τῶν κοινῶν οἱόν τ' εἶναι αἰσθητήριόν τι ἴδιον ὧν ἑκάστῃ αἰσθήσει αἰσθανόμεθα κατὰ συμβεβηκός.* Le texte de la *vetusta translatio: non secundum accidens* qui supposerait *οὐ κατὰ συμβέβηκος* qu'aucun ms. ne porte et qu'aucun commentateur n'a lu, est certainement issu d'une méconnaissance de la pensée véritable d'Aristote, due à l'amphibologie de l'expression *κατὰ συμβέβηκος*, dont la traduction latine est toujours prise, dans la langue philosophique du M. A., en un sens purement technique. L'intrusion de *οὐ* était d'autant plus suggérée et semblait rendre le passage d'autant plus clair que le but d'Aristote est précisément de démontrer que la perception des sensibles communs *n'est pas κατὰ συμβεβηκός*, ainsi qu'il le dit plus loin (a 27): *τῶν δὲ κοινῶν ἤδη ἔχομεν αἴσθησιν κοινήν, οὐ κατὰ συμβέβηκος*, ce qui a poussé TORSTRIK (*De Anima*, p. 162), NEUHAEUSER (*Arist. Lehre von dem sinnlichen Erkenntnissvermögen und seinen Organen*, p. 36) et SUSEMIHL (*Burs. Jahresb.*, XXX, p. 42) à restituer *οὐ* dans le texte. Sans vouloir introduire ici une discussion philologique, remarquons que si Aristote avait écrit *οὐ κατὰ συμβέβηκος*, toute une partie de la discussion eut été inutile vu qu'elle a pour but de dissiper l'équivoque qui semble méter inextricablement les *ἀισθητὰ κατὰ συμβέβηκος* et les *ἀισθητὰ κοινά* perçus *κατὰ συμβεβηκός τοῖς ἰδίοις ἀισθητοῖς*. D'autre part, il est clair que *κατὰ συμβεβηκός* doit se prendre uniquement ici, non en son sens philosophique, mais en son sens étymologique, ainsi que le montre nettement le passage suivant: *κίνησις καὶ μέγεθος ἃ συμβέβηκε τοῖς ἀισθητοῖς* (428 b 23, cf. 425 b 5 et 8; 428 b 22). Il est donc inutile de penser, avec Rodier (*op. cit.*, p. 353) qui Aristote n'expose pas ici ses propres idées. C'est le contraire qui est vrai.

regarde (d'une manière plutôt obscure) comme proportionné à l'objet",[17] mais grâce au *mouvement* imprimé par les sensibles communs sur les organes spéciaux des sens et ainsi grâce à cet ébranlement transmis au *sensus communis*. Thémistius, Simplicius et Philopon semblent faire de κίνησις un synonyme de πάθος. Saint Thomas dit plus exactement: *Quaecumque enim sentiuntur per hoc quod* immutant *sensum, sentiuntur per se et non secundum accidens . . . et hoc est quod dicit quod haec omnia sentimus motu, idest* quadam immutatione.[18] En effet, c'est précisément parce que le sensible accidentel, en tant qu'il est accidentel, n'affecte aucunement le sens, qu'il se distingue du sensible commun.[19] D'autre part, si l'αἰσθητόν κοινόν était perçu par un organe sensible spécial, ce dernier ne pourrait être qu'un des cinq organes sensibles spéciaux que nous possédons et dont le nombre est fixement et strictement limité.[20] Supposons que ce soit l'organe de la vue: le sensible commun serait alors perçu par la vue, tout comme un objet doux, coincidant avec un objet blanc, est perçu par elle. Or, cette perception est accidentelle puisque la vue perçoit la couleur et non la saveur. Elle serait donc illusoire. Sans doute, Aristote ajoutera-t-il, un peu plus loin que cette perception relève du *sensus communis*[21]

[17] W. D. Ross, *Aristote* (trad. fr., Paris, 1930), p. 197, cette interprétation de Ross semble être issue du texte du *De Mem*, 2, 452 b 10, que Beare traduit: "For it is not by the mind's reaching out towards them, as some say a visual ray from the eye does in seeing, that one thinks of large things at a distance in space (for even if they are not there, one may similarly think them); but one does so by a proportionate mental movement." (*Parva Naturalia*, Oxford, 1908)

[18] *Op. cit.*, lib. III, lect. I, § 577, p. 197.

[19] Cela résulte du rapprochement de *De An.*, B, 6, 418 21: κατὰ συμβεβηκός γὰρ τούτου αἰσθάνεται . . . διὸ καὶ οὐδὲν πάσχει ᾗ τοιοῦτον ὑπὸ τοῦ αἰσθητοῦ (ᾗ τοιοῦτον doit s'entendre ᾗ ὁ λευκὸς Διάρους ἐστὶν υἱός, comme le suggère Simplicius, 128, 13) et de Γ, 1, 425 a 27: τῶν δὲ κοινῶν ἤδη ἔχομεν αἴσθησιν κοινήν, οὐ κατὰ συμβεβηκός.

[20] Aristote en a fait la démonstration quelques lignes plus haut en 424 b 22. auxquelles notre passage se rapporte étroitement par la transition οὐδέ de 425 a 14.

[21] *De An.*, Γ, 1, 425 b 2: οὐ γὰρ δὴ ἑτέρας (sc. αἰσθήσεως κοινῆς) γε τὸ εἰπεῖν ὅτι ἄμφω ἔν.

(et c'est ce qui introduit ici la confusion que les Commentateurs s'évertuent à dissiper par divers moyens), mais c'est uniquement en tant que cette perception d'objets relevant en soi de deux sens différents, est effectuée en fait par le *sensus communis*, et non, comme ici, par le sens spécial de la vue. Cette perception occasionnelle du doux par la vue se fait évidemment lorsque saveur et couleur sont saisies simultanément dans un seul et même objet. Si l'on rejette cette interprétation, poursuit Aristote, la perception du doux par la vue en deviendra encore plus accidentelle, s'il est vrai qu'il existe des degrés dans l'accidentel; [22] elle sera comme la perception de cette masse blanche que la vue aperçoit et qui, par *pur* accident, se trouve être le fils de Cléon.[23] De toute façon donc, le *sensus communis* ne peut posséder un organe spécial; car la possession de cet organe spécial ferait de la perception du *sensus communis* une perception accidentelle, alors qu'elle doit être uniquement une perception commune. Le nerf principal de toute l'argumentation d'Aristote est ainsi que la désignation d'un organe spécial, centre du *sensus communis*, ferait de l'*αἰσθητόν κοινόν* un *αἰσθητόν κατὰ συμβεβηκός*. Il en résulte que, dans la pensée d'Aristote, deux formalités étroitement dépendantes l'une de l'autre, distinguent le sensible commun du sensible accidentel:

[22] Cf. *Phys.*, B, 2, 195 b 1.

[23] Je pense qu'il faut laisser en 425 a 24: *τον Κλέωνος υἱὸν ἡμᾶς ὁρᾶν* qui semble, à première vue, une inutile répétition de a 25, car si l'on affirme l'existence d'un organe propre au sens commun, ce n'est pas dans l'obligation d'affirmer l'existence d'une perception occasionnelle du doux par la vue (alors que cette perception relève du sens commun), que nous sommes rejetés, mais dont l'obligation de faire de toute perception du sens commun une perception purement et simplement accidentelle, *comme l'est celle du fils de Cléon* saisi, alors qu'on l'ignorait, comme masse blanche qui lui est fortuitement identique. En effet, la perception du doux par la vue, sous le contrôle du sens commun, n'est pas une perception accidentelle (aucune perception du sens commun n'est accidentelle), c'est une perception d'un sensible accidentellement donné en fait avec un autre sensible. La perception du fils de Cléon comme masse blanche est au contraire la perception accidentelle d'un sensible accidentel, ne relevant pas comme telle du sens commun (cf. 418 a 21-22).

d'abord, le sensible commun, de soi (καθ' αὑτόν) et en vertu même de sa nature propre, provoque une κίνησις organique, diffuse mais réelle, alors que le sensible accidentel, considéré sous son aspect d'accident, n'ébranle en rien la sensibilité d'aucun organe: ce n'est pas, en effet, le fils de Cléon ou de Diarès qui est perçu par l'organe visuel, mais telle masse blanche accidentellement identique au fils de Cléon ou de Diarès; ensuite, le sensible commun n'a pas d'organe spécial, alors que le sensible accidentel est toujours perçu par un des organes des cinq sens, c'est-à-dire, dans l'exemple choisi, par la vue. En d'autres termes, le sensible commun cause une κίνησις, mais n'a pas d'organe, tandis que le sensible accidentel ne cause pas une κίνησις, mais porte sur un organe. Il semble à première vue qu'il n'y ait là que subtil paradoxe jailli de quelque jonglerie d'idées; en réalité, il est vrai que toute κίνησις est relative à un organe, sinon elle ne déboucherait que sur le vide, mais le paradoxe n'est qu'apparent: le sensible commun provoque une κίνησις, mais une κίνησις affectant tous les organes, puisqu'il est κοινόν πασῶν, ou du moins deux d'entre eux; il n'a donc aucun organe *spécial*. Le sensible accidentel, en tant que sensible, occasionne une κίνησις en tel ou tel organe *spécial*, mais en tant qu'accidentel, son caractère accidentel, comme d'être le fils de Cléon, se cachant derrière son caractère sensible, comme d'être une masse blanche, il ne cause aucune κίνησις. C'est le langage qui ramasse dans l'expression *sensible accidentel* deux concepts antagonistes, qui est responsable de la Confusion.

"Les divers sens spéciaux perçoivent accidentellement (κατὰ συμβεβηκός) leurs sensibles propres mutuels, non pas précisément sous leur aspect formel de sens spéciaux, mais en tant qu'ils constituent un sens unique et commun, lorsque leurs perceptions relatives à un seul et même objet se produisent simultanément. Ainsi en est-il lorsque nous remarquons que la bile est à la fois amère et jaune. Il est sûr, en effet, que c'est le sens commun qui, à l'exclusion de tout autre, peut affirmer (εἰπεῖν) que ces

deux qualités sont liées l'une à l'autre. De là vient qu'il peut se tromper et, si l'objet est jaune, imaginer qu'il est de la bile."[24] Comment Aristote peut-il affirmer, d'une manière aussi flagrante que la perception des sensibles communs est κατὰ συμβεβηκός et recourir à un exemple qu'il a classé un peu plus haut [25] parmi les sensibles accidentels? C'est qu'il existe, selon lui, une relation assez étroite entre les deux genres de sensibles que d'autre part il disjoint: un sensible accidentel peut, par une simple transposition, devenir un sensible commun. Il lui suffit d'affecter plus d'un organe sensible spécial et que deux perceptions différentes spécifiquement l'atteignent, et puis se rencontrent simultanément dans l'arrière-fond commun à leur sensibilité respective. Le déclanchement de l'activité du *sensus communis*, coordonnant ces deux sensations relatives à un même objet, n'est alors evidemment pas possible sans l'intervention d'une troisième perception, celle du temps, qui, elle aussi, est une fonction du *sensus communis*,[25] et s'appelle la mémoire. Son œuvre est d'éveiller la puissance perceptive du sens commun par le parallèle qu'elle opère entre l'une ou l'autre de ces sensations et les κινήσεις que leurs productions précédentes avaient laissés comme traces permanentes dans les organes.[26] D'autre part, l'activité du sens commun se superpose à l'apparition des sensibles accidentels dans le champ de la sensibilité: chaque sens perçoit accidentellement (κατὰ συμβεβηκός) le sensible afférent à un sens différent; on n'est toutefois là en face que d'un sensible par accident, que la vue perçoive accidentellement la saveur amère du fiel ou que le goût en perçoive accidentellement la couleur jaune, même simultanément. Pour que deux sensations cessent d'être accidentelles, la condition nécessaire et suffisante est que le sens commun prononce (εἰπεῖν) leur identité. Enfin, si le sensible accidentel se rapproche du sensible commun,

[24] *De An.*, Γ, 1, 425 a 30 - b 4.
[25] *De Mem.*, 1, 450 a 10 sq.
[26] Cf. *De An.*, A, 4, 408 a 17: τὰς ἐν τοῖς αἰσθητηρίοις κινήσεις ἢ μονάς et Γ, 2, 425 b 24.

la réciproque est également vraie: on pourrait dire qu'aux yeux d'Aristote le sensible commun est un sensible accidentel, à condition de mettre l'accent, non point sur *accidentel*, mais sur *sensible*. Il suffit que le goût *perçoive effectivement* la saveur amère que la vue *perçoit accidentellement*, cachée derrière son sensible propre: la couleur jaune, et que ces deux perceptions soient réunies dans l'unité d'aperception du *sensus communis*, pour qu'il y ait perception d'un sensible commun. Il se produit là un chassé-croisé de perceptions de sensibles accidentels relatifs à un seul et même objet. C'est pourquoi Aristote nous dit que les divers sens saisissent κατὰ συμβεβηκός leurs sensibles propres mutuels, en tant qu'ils sont μία.[27]

Pénétrons plus profondément, à la suite d'Aristote, dans la mécanisme interne de la perception du *sensus communis*. Comment se représenter une perception simultanée d'aspects sensibles hétérogènes ou simplements différents? Chaque sens, pris en particulier, est relatif à l'objet sensible qui tombe sous ses prises, " Il est est attaché à son organe pris comme tel et son rôle est de discerner les différences de son objet sensible spécifique." [28] Il ne peut donc intervenir qu'à titre accidentel dans la sphère d'un autre sens. Or toute hétérogénéité ou toute différence d'aspects sensibles relève de l'ordre sensible et ne peut donc être saisie que par la sensation: ἀνάγκη δὴ αἰσθήσει · αἰσθητὰ γάρ ἐστιν. Cette sensation ne pouvant se produire dans les organes sensibles particuliers, spécialisés dans la perception de tel ou tel sensible propre, on pourrait croire cependant que le toucher qui, en tant que πρώτη αἴσθησις[29] et qu'embrassant une certaine diversité d'aspects tangibles, offre une certaine analogie avec le *sensus communis*, soit la faculté discriminatrice de ces différences. Pareille hypothèse ne se soutient pas. Car, il est impossible que la chair constitue l'organe immédiat de la sen-

[27] Cf. note 24.

[28] *De An.*, Γ, 2, 426 b 8-10.

[29] *De An.*, B, 2, 413 b 5; 414 a 3; 3, 414 b 3; Γ, ch. 12 et 13; *De part. an*, B, 8, 653 b 23.

sibilité générale puisque ce n'est pas en *touchant* son objet que l'activité de la faculté discriminatrice s'exerce.[30] Il faut dès lors poser l'existence d'une seule et même faculté, jugeant de la diversité sensible, car la dernière hypothèse possible, celle d'un ensemble d'organes séparés capable d'opérer la discrimination entre sensibles, entrainerait cette absurdité que deux êtres divers percevant l'un et l'autre des sensibles différents percevraient du même coup la différence de ces sensibles.

Mais si ce rôle discriminateur appartient à une seule et même faculté qui est le *sensus communis*, il faut aussi qu'elle l'exerce en un seul et même instant indivisible. Nous citerons ici, en son intégrité, le raisonnement d'Aristote, admirable de vigueur et de précision: " Que ce discernement ne puisse pas non plus se produire en des moments distincts, les considérations suivantes le prouvent. C'est la même faculté, avons-nous dit, qui affirme la diversité du bon et du mauvais. Pareillement, lorsqu'elle affirme que l'un diffère de l'autre, elle affirme aussi que l'autre diffère de l'un. Le rapport temporel exprimé par la conjonction ' lorsque ' n'est nullement une simple coincidence. Coincidence signifie en ma pensée l'*affirmation actuelle* de la diversité réciproque de deux choses que n'accompagne pas

[30] Tel est le sens obvie de ce passage (426 b 15-17) que les commentateurs ont interprêté de façons très diverses. L'interprétation de Saint Thomas (lib. III, lect. III, § 602, p. 206) est très voisine de celle de Simplicius (197, 11) et de Philopon (982, 30) dont elle semble avoir subi l'influence, soit par l'intermédiaire des Arabes, soit, plus probablement, à la suite d'un renseignement donné Guillaume de Moerbeke à son confrère. Comme eux, en effet, Saint Thomas souligne que la chair *non est ultimum organum sensus tactus*. Il s'éloigne toutefois de Simplicius et de Philopon dans la partie positive de son interprétation. Ce qui s'oppose le plus, à première vue, à l'interprétation naturelle que nous donnons de ce passage, est le fait qu' Aristote semblerait considérer ici la chair comme l'organe du toucher, alors qu'au livre B, ch. 11, il refuse de souscrire à cette opinion. L'argumentation d'Aristote n'implique en réalité rien de pareil: en effet, le Stagirite se place ici au point de vue d'un adversaire qu'il se suscite et non point directement au centre de ses propres idées sur la question. Au premier abord, dit-il, l'opinion commune et vulgaire qui voit (avec raison) le sens du toucher porter sur une pluralité d'objets différents et admet (à tort) que la chair est son organe immédiat, pourrait incliner à croire

l'affirmation de leur *diversité actuelle*. L'affirmation de cette faculté est au contraire actuelle et porte sur une diversité actuelle. Sa perception de leur différence mutuelle est donc instantanée. Elle forme ainsi une unité indivisible agissant en un temps indivisible. Cependant, il est impossible que des mouvements opposés affectent simultanément une même chose prise comme indivisible et comme agissant en un temps indivisible. N'est-ce-pas ce qui aura lieu si un objet doux ébranle le faculté sensible et la pensée, de telle ou de telle façon, un objet amer d'une façon opposée, et un objet blanc d'une façon différente? Faut-il donc admettre que le jugement discriminateur des sensibles différents est instantané, concrètement indivisible et inséparable, mais divisé logiquement? C'est alors, en un sens, comme divisible, qu'il perçoit les sensibles distincts et, en un autre, comme formellement indivisible: pris abstraitement, il est en effet divisible, mais si l'on considére son point d'attache organique et son expression concrète, il est indivisible. Or, cette solution n'est-elle pas inacceptable? C'est uniquement sous son aspect potentiel que la faculté discriminatrice s'identifie indivisiblement aux contraires, et non sous son aspect conceptuel. Dans l'ordre même de son exercice actuel, elle est au contraire divisible: il ne se peut, en effet, qu'elle soit simultanément blanche et noire, et cette impossibilité entraine celle de recevoir les formes du blanc et du noir, de les sentir et de les juger, s'il est vrai que la reception des formes constitue la

que le *sensus communis* ne se distingue pas du tact; mais il est impossible que les différences spécifiques entre sensibles soient perçues par contact, ce qui entraine la fausseté de l'hypothèse proposée. D'ailleurs, à supposer même qu'Aristote parle en son propre nom, on ne peut nier que maintes fois il juge que le toucher opère par contact immédiat: à ce chapitre 11 du livre B, on lit: *γίνεσθαι τὴν αἴσθησιν ἅμα θιγγανομένων* (423 a 1); si l'organe tactile se trouve à l'intérieur du corps (*ἐντός*) et si la chair n'est qu'un milieu (*μεταξύ*) (423 b 22-26), pratiquement parlant, par suite de l'instantanéité de la sensation de contact, on peut admettre que la sensation tactile s'effectue immédiatement, comme Aristote le fait lui-même en Γ, 1, 424 b 27 sq. et 13, 435 a 17, et donc que la chair où a lieu le contact, est apparemment l'organe du toucher.

sensation et la pensée. Son cas est plutôt parallèle à la description que certains nous font du point: selon l'aspect où on le considère, il est simple ou il est double et, en ce dernier cas, il est aussi divisible. Dès lors, en tant qu'elle est indivisible, la faculté discriminatrice forme une unité agissant instantanément, mais en tant qu'elle est divisible, elle ne constitue plus une unité, puis qu'elle emploie deux fois le même σήμειον au même moment. En tant donc qu'elle se sert de la limite pour un double usage, elle distingue deux choses séparées, au moyen d'un jugement en quelque sorte divisible; mais en tant qu'elle est une, elle s'en sert pour au seul usage et perçoit en même temps les différences sensibles." [31]

Dans le *De Sensu*, Aristote propose une solution en apparence quelque peu différente.[32] Le *sensus communis*, capable de percevoir la diversité sensible, est un et indivisible en acte lorsqu'il perçoit cette diversité; il est divisé en acte et s'épanouit en une pluralité, quand il se ramifie en sens distincts capables de percevoir leurs sensibles spécifiques.[33] Or, il est possible que l'ordre sensible objectif se transpose sans altération dans l'ordre sensible subjectif qui le traduit à l'intérieur de l'âme. Tel objet sensible, constituant une individualité concrètement une, possède une multiplicité d'aspects qualitatifs et sensibles dont l'essence est différente, mais qui sont tout unifiés dans l'unité de l'objet où ils s'enraciment. On peut dès lors admettre qu'une faculté, telle que le *sensus communis*, conserve son unité et son identité numérique dans sa perception des sensibles différents, bien que son essence apparaisse multiple et que "ses πάθη divers diffèrent, les uns génériquement, les autres spécifiquement", comme

[31] *De An.*, Γ, 2, 426 b 23 - 427 a 14. Pour a 14, nous adoptons le texte de Hicks.

[32] *De Sens.*, 7, 449 a 5-20.

[33] Alexandre se trompe quand il affirme, dans son *De Sensu*, 347, 12 et 348, 9, qu' Aristote, dans la première partie du texte du *De Sensu* que nous analysons, présente la solution qu'adopte le *De Anima*. Il s'agit simplement ici, comme on peut le constater, des rapports entre les divers sens et la sensibilité générale qui leur est commune.

les divers aspects sensibles sur lesquels ils portent. Il en résulte que la perception simultanée des divers sensibles peut être effectuée par une faculté dont la structure concrète serait une et indivisible, mais dont l'essence serait multiple. Rodier,[34] à la suite d'Alexandre,[35] qu' Aristote " parait ici considérer comme suffisante la solution que, dans le *De Anima*, il trouve incomplète." Il nous semble, au contraire, qu'Aristote se place ici à un point de vue sans doute différent du *De Anima*, mais qui n'en est pas moins substantiellement le même. En effet, dans quel sens devons nous interpréter la théorie proposée par le *De Anima* et comment l'analogie du *sensus communis* au point se justifie-t-elle? Il faut, croyons-nous, avec la plupart des commentateurs anciens, voir en ce point le centre du cercle, et non, avec Simplicius et Saint Thomas,[36] le point qui segmente une ligne.[37] De même donc que le point central d'un cercle est simple ou double, selon qu'on le considère comme centre du cercle ou comme le point d'aboutissement et de départ de deux rayons, de même le *sensus communis* est le *principium unum et terminus unus omnium sensibilium*,[38] le centre de la sensibilité générale de l'organisme ou le principe et le terme de tel ou tel sens qui y puise sa sensibilité particulière. Au premier sens, il est simple; au second, il est double ou même quintuple, si les cinq sens entrent en jeu. Telle est l'architecture du *sensus communis*, considérée en elle-même et indépendamment de l'objet sensible. Dans le *De Sensu*, d'autre part, Aristote n'envisage plus le *sensus communis* en soi, mais dans sa relation à l'objet sensible extérieur: la sensibilité générale unifie les

[34] *Op. cit.*, t. II, p. 391.

[35] *De Sensu*, 349, 6 et 352, 10.

[36] ALEXANDRE, *ἀπορ. κ. λύσ.*, III, 9, 96, 14; THÉMISTIUS, 189, 10; PHILOPON, 681, 8; SOPHONIAS, 114, 25; SIMPLICIUS, 114, 25; S. THOMAS, § 609.

[37] Ce qui pourrait faire croire qu'il s'agit du point qui segmente une ligne en deux parties, c'est qu' Aristote nous dit (427 a 10) qu'il est *μία ἢ δύο*. Mais ce *δύο* est amené sans doute par les exigences de la comparaison, Aristote comparant au point la perception de *deux* sensibles différents.

[38] S. THOMAS, *loc. laud.*

apports divers des divers sens, comme l'objet sensible, unifie en son individualité ses aspects sensibles divers. De même donc que cet objet rassemble les divers πάθη on aspects sensibles qui le recouvrent, de même le *sensus communis* rassemble en lui les divers κινήσεις qui y aboutissent. Et ici l'objection qu' Aristote fait dans le *De Anima* à la première théorie qu'il propose, ne porte plus.

Sans doute, il est vrai de dire que *l'acte divise,*[39] c'est-à-dire qu'il s'oppose à la réalisation simultanée de deux contraires, et qu'il faut précisément ici que les contraires soient présents simultanément et actuellement au *sensus communis.* Mais il ne s'agit pas ici d'un organe matériel et divisible où cette réalisation serait trop manifestement impossible, mais d'une faculté plastique qui relève d'un ordre supérieur et dont l'immatérialité est à l'abri de toute division: " la faculté et son organe sont matériellement identiques, mais leurs natures rationelles diffèrent: l'organe percepteur est une chose étendue, tandis que l'essence de son aptitude perceptrice ou sa sensibilité transcende l'étendue pour constituer la forme spécifique et la faculté de l'organe." [40] C'est la lumière de cette interprétation qu'il faut, croyons nous, projeter sur la fin obscure et controversée du second chapitre du livre Γ du *De Anima,* que les amateurs de clarté immédiate (celle qu'il ne faut jamais attendre de la lecture d'Aristote) ont altéré avec tant d'aisance. Quand Aristote en appelle ici à la comparaison du point, il faut prendre garde de verser dans une exégèse matérialiste qui ferait du *sensus communis* une sorte de lieu géométrique ou plutôt de mécanisme perfectionné qu'un simple coup de levier oriente diversement. Le ὥσπερ qui l'introduit a une valeur strictement comparative, et le sens matériel de la comparaison doit dès lors recouvrir un sens psychologique plus profond qui le *transpose* dans un autre domaine proprement spirituel. Le point est considéré comme simple et indivisible ou comme double et divisible. Ainsi en est

[39] *Met.*, z, 13, 1039 a 7.

[40] *De An.*, B, 12, 424 a 26 sq.

il par conséquent (οὖν) de la sensibilité générale dans son rôle discriminateur (τὸ κρῖνον). En tant qu'indivisible[41] sous son aspect de faculté sensible transcendant déjà comme telle l'ordre matériel des dispositions organiques, le *sensus communis* doit être envisagé comme une réalité unique (ἕν) percevant instantanément et sans succession temporelle (ἅμα) l'opposition des sensibles. L'impossibilité qu'il y a pour "le blanc" et "le noir" à coexister dans une même perception, Aristote le sait mieux que tout autre, puisqu'il la souligne dans son argumentation.[42] Mais ce qu'il importe de noter ici, c'est que cette impossibilité ne joue que dans la sphère de l'organe. Or le *sensus communis*, Aristote a insisté assez là-dessus, n'a pas d'organe. C'est pourquoi une, et indivisible, la sensibilité diffuse qui le constitue devient divisible (διαιρετόν) et perd son unité (οὐχ ἕν), dès qu'elle est canalisée et particularisée. Dans les organes des sens spéciaux qui lui fournissent les diverses sensations sur lesquelles elle doit opérer. En ce cas, elle utilise deux fois le même σήμειον, c'est-à-dire la même empreinte sensible,[43] en même temps. En d'autres termes, la même impression sensible peut être prise dans son rapport à son sens propre ou dans son

[41] La lecture ἀδιαίρετος en 427 a 11 donnée par ELWX, une seconde main de V et Sophonias (114, 15) n'est pas impossible. Si l' ἀδιαίρετον de CSUV et d'Alexandre (94, 20) se rapporte à τὸ κρῖνον situé immédialement après, ἀδιαίρετος qualifie ἡ αἴσθησις, la sensation ou mieux la sensibilité, qui s'extrait facilement du contexte. A vrai dire, cette leçon est peut-être préférable, car ce à quoi Aristote fait allusion dans sa comparaison, c'est à la sensibilité avant sa différenciation en *sensus communis* et en sens particuliers.

[42] 427 a 8.

[43] Le sens de σήμειον est ici (427 a 12) difficile à déterminer. Il ne semble pas qu'il s'agisse encore du point que d'ailleurs Aristote a appelé plus haut στιγμή, puisque nous sommes dans la seconde partie de la comparaison. Le sens qui conviendrait le mieux est celui d'empreinte, de cachet qu' Aristote emploie assez souvent pour désigner l'impression sensible (cf. B, 12, 424 a 14 sq.) et qu'il a emprunté à Platon: cf. par exemple: *Theet.*, 191 A: Δῶρον τοίνυν αὐτὸ φῶμεν εἶναι τῆς τῶν Μουσῶν μητρὸς Μνημοσύνης, καὶ εἰς τοῦτο ὅτι ἂν βουληθῶμεν μνημονεῦσαι ὧν ἂν ἴδωμεν ἢ ἀκούσωμεν ἢ αὐτοὶ ἐννοήσωμεν, ὑπέχοντας αὐτὸ ταῖς αἰσθήσεσι καὶ ἐννοίαις, ἀποτυποῦσθαι, ὥσπερ δακτυλίων σημεῖα ἐνσημαινομένους.

rapport au sens commun. Par conséquent, lorsque la sensibilité se sert de la racine où communient les divers sens pour percevoir deux sensations, elle distingue les deux choses séparées qui ont provoqué ces sensations. La perception est dès lors en un certain sens divisible. Mais en tant qu'elle est une et ramassée dans l'unité du *sensus communis*, elle se sert de cette racine prise comme point d'aboutissement unique de tous les sens et perçoit de la sorte en même temps les différences sensibles. A l'étage des sens spéciaux liés à des organes corporels, la réception simultanée de deux sensations est contradictoire, mais à l'étage du *sensus communis* dégagé de la matière qui ne confère plus une individualité numérique à la sensation, il n'est plus contradictoire de poser l'existence d'une perception commune. Dans la pensée d'Aristote, une telle perception commune n'est certes pas le conglomérat de deux perceptions, mais la perception sous-jacente, si l'on peut dire, de leur différence. Il y a là une transposition dans l'ordre objectif, de l'ordre subjectif de la sensibilité générale sous-jacente aux divers sens spéciaux.

Aristote reprend sa théorie du *sensus communis* en un autre endroit du *Traité de l'Ame*. Mais nous jouons de malheur: les éclaircissements que nous sommes en droit d'attendre rendent à nouveau la question plus complexe et plus inextricable. Ils sont en effet contenus au chapitre 7 du livre Γ dont Christian Belger nous dit: *Hoc caput, ut nunc est, ab Aristotele scriptum esse non posse. Editorem, quisquis fuerit, ita illud composuisse, ut quaecumque in scidis Aristotelis inveniret, quae viderentur aliquo modo ad νοῦν pertinere, ea conglutinaret.*[44] Quoi qu'il en soit de ce problème particulièrement épineux, le passage de ce chapitre où nous trouvons les renseignements relatifs au sens commun forme une masse assez homogène pour permettre une investigation qui ait chance d'aboutir. Nous allons en tracer la piste.

[44] Dans sa préface à la seconde édition de l'*Aristotelis de Anima libri tres* de F. A. Trendelenburg, p. xxv.

" Les images sensibles internes (τὰ φαντάσματα) se comportent vis-à-vis de la faculté intellective, comme les objets sensibles vis-à-vis du sens; lors donc qu'elle en affirme ou en nie le bien ou le mal, elle les évite ou les recherche. C'est pourquoi l'âme ne pense jamais sans image." [45] Pour bien comprendre ce texte, clair de prime abord, mais qui enveloppe de redoutables difficultés, il faut bien comprendre la place de ce chapitre dans l'ensemble du troisième livre. A la fin du sixième chapitre, la théorie de l'intellect spéculatif, avec ses tenants et aboutissants, est virtuellement achevée, du moins en sa phase d'ébauche; au début du chapitre neuf, commence la théorie du mouvement chez les animaux et de son origine. Entre ces deux parties assez bien délimitées, surtout la dernière, s'intercalent deux chapitres qui prolongent sans aucun doute la première d'entre elles, mais qui, par certains thèmes, préludent déjà, pour ainsi dire, à l'autre. Nous en avons ici un exemple assez significatif: la question du φεύγειν et du διώκειν déborde évidemment le cadre d'une enquête sur les puissances purement théorétiques de l'âme, pour se rattacher à l'étude des facultés actives. Cette position intermédiaire, nous verrons tout-à-l'heure si elle ne répond pas à l'intention profonde d'Aristote (ou des péripatéticiens qui auraient rassemblé en un tout plus au moins cohérent les matériaux de ce chapitre). D'autre part, comment la conclusion fameuse: διὸ οὐδέποτε νοεῖ ἄνευ φαντάσματος ἡ ψυχὴ, découle-t-elle de prémisses si différentes? Comment une conséquence aussi nettement " théorique " est-elle déduite d'un contexte " pratique "? L'allure capricieuse et libre du chapitre ne laisse pas de l'expliquer. De l'analogie entre le comportement du sens et celui de l'intelligence, Aristote déduit deux choses. D'abord, que l'activité intellectuelle, non plus prise uniquement en elle-même en ses opérations cognoscitives, mais en son rapport avec le bien ou le mal, objets propres de l'activité volontaire, revêt un caractère analogue à celui de la sensibilité mise en présence

[45] Γ, 7, 431 a 14-17.

du plaisir ou de la douleur. Le sens peut être, comme l'intelligence, une faculté cognoscitive des objets sensibles, mais il peut aussi, et là encore la ressemblance se poursuit, recevoir la perception d'objets sensibles accompagnés de la formalité *delectabile aut non delectabile:* " l'acte de sentir ressemble à celui par lequel l'intelligence exerce uniquement son pouvoir d'énoncer et d'appréhender; par contre, si la chose sentie est agréable ou désagréable, par un mouvement comparable à l'affirmation ou à la négation de l'intelligence, la faculté sensible la recherche ou la fuit." [46] Aristote, on le voit, a repris l'analogie par l'autre bout; de l'attitude du sens, il déduit celle de l'intelligence, en y ajoutant toutefois que la κατάφησις ou l'ἀπόφησις d'ordre intellectuel deviennent alors un φεύγειν ou un διώκειν d'ordre moins intellectuel que volontaire. On saisit donc ici la combinaison des thèmes dont nous avons parlé plus haut, avec une certaine prédominance du second sur le premier. Ensuite, la situation se renverse: Aristote, abandonnant des considérations qui relèvent plutôt de l'analyse de l'intellect pratique, reprend l'examen de l'intellect théorique, en concluant de l'analyse du sens et de l'intellect, à la nécessité pour l'intellect de penser par l'intermédiaire d'images. Un objet sensible, comme tel, ne peut affecter l'intelligence; il faut qu'il soit décanté par la φαντάσια et devenu image. L'image tient lieu de sensation pour l'intellect, et de même que le sensible est nécessaire au sens pour qu'il y ait sensation, ainsi l'image est nécessaire à l'intelligence pour qu'il y ait intellection.

En ce point précis de la déduction aristotélicienne, il semble que la discussion soit achevée et qu'ici se termine notre chapitre. Mais Aristote n'en reste pas là: la comparaison de l'intellect au sens, qui lui montre l'étroite association et la progression ascendante des trois termes: sensation, phantasme et concept, aiguillonne aussitôt sa pensée vers l'examen de la faculté qui autorise précisément cette connexion, c'est-à-dire, du *sensus*

[46] *Ibid.*, 431 a 8-10.

communis intermédiaire entre les sens particuliers et les facultés supérieures: " L'air exerce telle modification qualitative sur le pupille, celle-ci transmet son excitation au sens commun; le processus est le même pour l'ouïe et pour les autres sens; le terme ultime de tous ces mouvements des divers sens est unique et constitue leur milieu unique de convergence, bien qu'au point de vue logique il y ait en lui une certaine multiplicité. Ce moyen de discerner le doux du chaud, on l'a désigné antérieurement; il convient toutefois d'en reprendre ici même la théorie".[47] Aristote résume ici puissamment et nerveusement la théorie du *sensus communis* qui l'avait préoccupé plus haut. Les commentateurs ont cependant obscurci ce passage par une interprétation, sinon fausse, du moins tendancieuse: d'après eux,[48] μεσότης signifierait l'organe du sens commun, ainsi appelé parce qu'il occupe le milieu de l'organisme. Or, s'il est vrai qu' Aristote fait du cœur un organe central de la sensibilité,[49] il n'en est pas moins vrai qu'ici même, au début du troisième livre du *De Anima*, il refuse de faire percevoir les sensibles communs par un organe spécial: *οὐδὲ τῶν κοινῶν οἷόν τε' εἶναι αἰσθητήριόν τι ἴδιον.*[50] En réalité, la pensée exacte d'Aristote semble être que le sens commun n'a pas d'organe *percepteur*; le cœur n'est pour lui qu'un domicile physiologique. Or, tout le contexte de notre passage supposerait, en l'occurence, que l'organe dont Aristote voudrait parler est capable de perception. Au surplus, comment considérer le cœur comme le point d'aboutissement (τὸ ἔσχατον) des autres organes sensibles? Faut-il donc estimer, avec Simplicius [51] qu'il s'agit ici du *point* (στιγμή)? Nous ne le croyons pas. Aristote en trois autres

[47] *Ibid.*, 431 a 17: *ὡς δὲ ὁ ἀὴρ τὴν κόρην τοιανδὶ ἐποίησεν, αὕτη δ'ἕτερον, καὶ ἡ ἀκοὴ ὡσαύτως, τὸ δὲ ἔσχατον ἕν, καὶ μία μεσότης, τὸ δ'εἶναι αὐτῇ πλείω, τίνι δ'ἐπικρίνει τί διαφέρει γλυκὺ καὶ θερμόν, εἴρηται μὲν καὶ πρότερον, λεκτέον δὲ καὶ ὥδε.*

[48] Cf. RODIER et HICKS, pour ne citer que ceux là, *ad loc.*

[49] Cf. *De Part. an.*, Γ, 4, 666 a 15; *De resp.*, 8, 474 a 30; *De Vit. et Mort.*, 3, 469 a 23, etc.

[50] 425 a 14.

[51] 269, 25.

endroits du *De Anima* nous parle de la μεσότης,[52] et toujours il s'agit de la *sensation* et non de *l'organe sensible*, de la faculté et non de son *substrat*. C'est en effet principalement et formellement la faculté qui est le milieu adequat des sensibles, l'organe n'en étant que le milieu matériel et secondaire. Concluons, pour faire bref, qu' Aristote a simplement ici en vue le sens commun. Remarquons en effet que, selon son habitude, il ne l'appelle pas de son nom; il ne le désigne même pas par une circonlocution: entrant immédiatement dans le vif du sujet, il situe simplement sa pensée par les mots ἕτερον, τὸ ἔσχατον, μέσότης, *puis*, un tel procédé risquant de créer confusion, il précise immédiatement: τίνι δ'ἐπικρίνει . . .: il s'agit de cette faculté discriminative dont nous avons parlé et dont nous allons reprendre la théorie, mais d'une autre façon. Plus haut en effet, la démonstration avait revêtu un caractère special: περὶ μὲν οὖν τῆς ἀρχῆς ᾗ φαμὲν τὸ ζῷον αἰσθητικὸν εἶναι, διωρίσθω τὸν τρόπον τοῦτον.[53] A proprement parler, Aristote n'expose pas une nouvelle théorie du *sensus communis* qui serait destinée à compléter la première, il insiste uniquement sur une difficulté subsidiaire que son étude précédente ne l'avait pas amené à poser. Comme l'a bien remarqué Rodier,[54] le problème qu' Aristote s'efforce de résoudre ici est le que celui du *De Sensu* et constitue un prolongement manifeste de la théorie générale exposée à la fin du chapitre III. Nous avons su comment la plasticité du sens commun pouvait s'adapter à la reception simultanée des sensibles différents; or toute différence est générique ou spécifique; si le sens commun parvient à saisir une différence générique, à plus forte raison sera-t-il capable de discerner une différence simplement spécifique, telle celle des sensibles contraires.[55] " Le sens commun ",

[52] 424 a 4, b 1; 435 a 21.
[53] Γ, 2, 427 a 14-16.
[54] *Ad loo.*
[55] *De Sensu*, 7, 448 a 13: εἰ οὖν πλεῖον ἀπέχει ἀλλήλων καὶ διαφέρει τὰ συστοίχως μὲν λεγόμενα ἐν ἄλλῳ δὲ γένει τῶν ἐν τῷ αὐτῷ γένει . . . ἔτι ἂν ἧττον ἅμα ἐνδέχοιτο αὐτὰ αἰσθάνεσθαι ἢ τὰ τῷ γένει ταὐτά . . .; 449 a 2:

nous dit Aristote, "forme une espèce de lieu d'unification des impressions sensibles: son unité est semblable à celle du point." [56] Jusqu'ici, rien de trop ardu à comprendre dans un simple rappel d'une théorie antérieure. Mais voici que commence un passage dont l'obscurité célèbre n'a peut-être pas son égale dans toute l'œuvre d'Aristote. Etant donné cet état de choses, on nous permettra d'en transcrire *in extenso* le texte grec: *καὶ ταῦτα ἓν τῷ ἀναλόγον καὶ τῷ ἀριθμῷ ὄν, ἔχει πρὸς ἑκάτερον, ὡς ἐκεῖνα πρὸς ἄλληλα· τί γὰρ διαφέρει τὸ ἀπορεῖν πῶς τὰ μὴ ὁμογενῆ κρίνει ἢ τὰ ἐναντία, οἷον λευκὸν καὶ μέλαν· ἔστω δὴ ὡς τὸ Α τὸ λευκὸν πρὸς τὸ Β τὸ μέλαν, τὸ Γ πρὸς τὸ Δ ὡς ἐκεῖνα πρὸς ἄλληλα· ὥστε καὶ ἐναλλάξ. εἰ δὴ τὰ ΓΔ ἑνὶ εἴη ὑπάρχοντα, οὕτως ἕξει ὥσπερ καὶ τὰ ΑΒ, τὸ αὐτὸ μὲν καὶ ἕν, τὸ δ'εἶναι οὐ τὸ αὐτό, κἀκεῖνο ὁμοίως. ὁ δ'αὐτὸς λόγος καὶ εἰ τὸ μὲν Α τὸ γλυκὺ εἴη, τὸ δὲ Β τὸ λευκόν.*[57] Nous ne retiendrons rien des explications proposées par Simplicius, Philopon, Saint Thomas, Belger, Torstrik, Freudenthal, Susemihl, Brentano, Baeumker, Neuhaeuser, Kampe, Wallace, Bullinger, Schell, Bywater, Jackson, Hicks, sans compter les invraisemblances incroyables de Essen; aucune ne parvient à éclairer le texte d'un bout à l'autre. Nous ne retiendrons pas non plus celles de Rodier, malgré leur sage modération, et peut-être en raison même de cette qualité, qui, en cette circonstance, devient au défaut. Nous entendons toutefois respecter le texte intégral des manuscrits.

Laissons pour l'instant la première phrase. La seconde n'offre aucune difficulté une fois qu'on a compris son parallélisme avec le *De Sensu:* "Quelle différence y-a-t-il, en effet, à rechercher comment le sens commun discerne les objets sensibles qui ne sont pas du même genre (*τὰ μὴ ὁμογενῆ*) et comment il discerne les objets sensibles opposés, tels le blanc et le noir?" Aucune, faut-il sous-entendre ici, puisque, ainsi que

εἴ δέ τούτων ἐν ἑνὶ καὶ ἀτόμῳ αἰσθάνεται, δῆλον ὅτι καὶ τῶν ἄλλων· μᾶλλον γὰρ ἐνεδέχετο τούτων ἅμα πλειόνων ἢ τῶν τῷ γένει ἑτέρων.

[56] 431 a 20: *ἔστι γὰρ ἕν τι, οὕτω δὲ ὡς ὁ ὅρος.*

[57] 931 a 22-b21.

l'avance le *De Sensu*, la perception d'une différence spécifique est plus facile que celle d'une différence générique. Mais, on comprend que dans le *De Sensu*, postérieur au *De Anima*, Aristote se contente de cette affirmation. Dans le *De Anima*, en effet, il en a tracé la démonstration par mode mathématique. " Posons en effet, l'identité des rapports de A (le blanc), à B (le noir) et de C (une qualité quelconque) à D (son contraire). Leurs rapports réciproques peuvent être renversés, on aura alors: A est à C ce que B est à D. Si donc CD relèvent d'une seule et même fonction, ils se comporteront vis-à-vis d'elle comme AB. Ils constitueront une seule et même perception, malgré leur diversité logique. Le même raisonnement s'applique au rapport qu'on supposerait entre A (le doux) et B le (blanc)." En ce cas, on aura la réciproque du théoreme. Nous croyons qu'en ce passage aucune obscurité ne subsiste, sauf peut-être sur un point (ὡς ἐκεῖνα πρὸς ἄλληλα).

Revenons à la première phrase. Les mots importants et toutefois peu compréhensibles sont ἑκάτερον et ἄλληλα, en dépendance immédiate eux-mêmes de ταῦτα et de ἐκεῖνα. Que sont ces mots? Des pronoms *démonstratifs*. Ils *désignent* donc quelque chose: celui qui les prononce *montre du doigt*, s'il leur donne un sens fort, ou indique par la pensée, s'il leur donne un sens faible, une réalité quelconque. Nous pensons qu'il s'agit ici du sens fort et qu' Aristote *montre effectivement* des objets. Il suffit d'admettre qu' Aristote indique du doigt les lettres A B Γ Δ, préalablement tracées par lui sur un tableau ou sur le sable, pour éclairer *complètement* le passage litigieux. Par ταῦτα, il désigne A Γ et par ἐκεῖνα l'ensemble A B Γ Δ. En d'autres termes, il fait du doigt la démonstration qu'il fera un peu plus loin par la parole. Nous avons donc ainsi les proportions designées par les pronoms:

$$\frac{A}{B} = \frac{\Gamma}{\Delta} \quad (A\Gamma = \tau\alpha\tilde{\upsilon}\tau\alpha) \quad (B\Delta = \dot{\varepsilon}\kappa\acute{\alpha}\tau\varepsilon\rho\sigma\nu)$$

et l'inverse

$$\frac{A}{\Gamma} = \frac{B}{\Delta}$$

désignée par l'expression ἐκεῖνα πρὸς ἄλληλα. *La phrase en question est donc littéralement intraduisible* puisqu'elle suppose un geste préalable. Nous serons contraints de rendre abstraitement ce qu'elle désigne concrètement.

Le reste de la phrase se comprend aisément: πρὸς indique évidemment le rapport; il faut lire ὄν (et non ὂν malgré les manuscrits) avec Simplicius; [58] ἓν τῷ ἀνάλογον καὶ τῷ ἀριθμῷ ὄν, est nettement une apposition au *sensus communis* sujet de ἔχει (il faut donc placer une virgule après ταῦτα mis ainsi intentionnellement en relief par Aristote). Nous traduisons donc: " Grâce à son unité proportionnelle et numérique, le sens commun possède en lui les rapports de telles ou telles qualités sensibles à l'un et l'autre de leurs contraires, au même titre que leurs rapports réciproques." Qu'on relise à présent toute notre traduction en replaçant ce dernier passage au début et en ayant à la pensée l'explication que nous proposons, et on verra qu'elle est la seule qui s'impose, parce seule elle éclaire la *totalité* du texte incriminé.

En résumé, seule la phrase: καὶ ταῦτα, ἓν τῷ ἀνάλογον καὶ τῷ ἀριθμῷ ὄν, ἔχει πρὸς ἑκάτερον, ὡς ἐκεῖνα πρὸς ἄλληλα, offre une difficulté véritable. Elle se dissipe si l'on admet l'hypothèse, on en conviendra, très plausible [59] du *tableau noir*.[60] Du reste, une traduction littérale n'est-elle pas convaincante? " Etant un analogiquement et logiquement, le sens commun possède ces choses (Aristote désigne ici A Γ) en leur rapport à chacun des deux (Aristote désigne ici B Δ) comme il possède celà (Aristote désigne ici A B et Γ Δ et *écrit la seconde proportion*) dans leur rapport mutuel." Alors, tout naturellement s'explique le γάρ le τί γάρ διαφέρει etc. . . . On comprend au surplus que cette démonstration faite uniquement par lettres devait appeler la

[58] 271, 14.

[59] Les écrits logiques sont remplis de cas semblables.

[60] Cette hypothése en implique évidemment une autre: le *De Anima* ne serait que des notes d'étudiant, une *reportatio*. Nous pensons revenir plus tard sur cette question dans un article spécial.

substitution des réalités aux symboles: d'où ἔστω δὴ ὡς τὸ Α τὸ λευκὸν etc. . . . Le τὸ Γ πρὸς τὸ Δ ὡς ἐκεῖνα πρὸς ἄλληλα n'offre plus alors d'une difficulté accessoire que la critique a résolue d'une façon acceptable: selon Christ, après Γ, les mots τὸ γλυκύ, et après Δ, τὸ πικρον, ont probablement disparu très tôt des manuscrits; d'autre part, ὡς ἐκεῖνα πρὸς ἄλληλα serait une glose intruse à faire disparaître. *Sic certe proportio disponenda est:* λεύκον : μέλαν = γλυκύ : πικρόν.[61] On pourrait toutefois se demander si pareille disparition et pareille intrusion, tellement voisines l'une de l'autre, sont bien vraisemblables. Très probablement ὡς ἐκεῖνα πρὸς ἄλληλα le a 26-27 est-il une addition on scholie marginale copiée sur a 23 et introduite subrepticement dans nos manuscrits pour éclairer la double proportion qui précède. Un tel fait apporte évidemment un appui à notre interprétation. Mais point n'est besoin, croyons nous, de supposer une chute de mots après Γ et Δ; il suffit de donner à la phrase une nuance de signification différente: Aristote n'a pas l'intention d'établir ici un rapport proportionnel (nous avons vu qu'il l'a déjà fait plus haut dans la phrase que nous avons éclairée), il a simplement l'intention de fixer concrètement un rapport symbolico-mathématique. Il faut donc peut-être traduire: "Que le rapport de Γ à Δ soit comme celui de Α (le blanc) à Β (le noir)", c'est-à-dire qu'il se traduise, peu importe comment, dans le réel, comme lui, en représentant des qualités contraires.

Mais continuons l'exégèse de ce laborieux chapitre. Après cette longue digression sur le sens commun, Aristote conclut brusquement: τὰ μὲν οὖν εἴδη τὸ νοητικὸν ἐν τοῖς φαντάσμασι νοεῖ. Il est bien difficile de relier pareille allégation à ce qui la précède immédiatement. En réalité, Aristote reprend le thème du νοῦς πρακτικὸς amorcé plus haut. Dans son commentaire, Saint Thomas souligne vigoureusement les articulations de cet ensemble complexe: *Deinde cum dicit "species quidem", mani-*

[61] ***Studia in Aristotelis libros metaphysicos collata,*** p. 30.

festat quod dixerat supra quod cum intellectus affirmat vel negat bonum aut malum, fugit aut prosequitur; concludens ex praedictis, quod pars animae intellectiva intelligit species a phantasmatibus abstractas.[62] Quant à l'expression τὸ νοητικόν, elle est sans doute prise à dessein au sens neutre: il s'agit certainement avant tout, comme le souligne Simplicius,[63] de l'intellect en sa fonction pratique, mais l'intention secrète d'Aristote est d'envelopper dans son assertion l'intellect théorique lui-même: ὅταν τε θεωρῇ, ἀνάγκη ἅμα φαντάσματι θεωρεῖν, dira-t-il plus loin.[64] On saisit ici sur le vif l'allure capricieuse de ce chapitre intermédiaire. Aristote reprend d'ailleurs l'idée abandonnée: "Et ce n'est pas seulement à travers les formes sensibles que se détermine pour elle (c'est-à-dire pour la faculté intellective) ce qu'elle doit poursuivre ou éviter; ces mouvements l'ébranlent, même en dehors de la sensation, chaque fois qu'elle porte sur les images qui en persistent." [65] Puis il ajoute un exemple: οἷον αἰσθανόμενος τὸν φρυκτὸν ὅτι πῦρ, τῇ κοινῇ γνωρίζει, ὁρῶν κινούμενον, ὅτι πολέμιος.[66] Hicks, par τῇ κοινῇ, entend, comme tout le monde, τῇ κοινῇ αἰσθήσει, mais la difficulté qu'il éprouve à accepter cette interprétation et qu'il partage avec Bywater,[67] provient d'une méconnaissance évidente du rôle joué ici par le *sensus communis*. Selon lui, il est impossible d'accorder ce texte avec la conclusion du chapitre I du livre Γ, selon laquelle il n'existe aucun αἰσθητήριον

[62] *Op. cit.*, § 777, p. 254.

[63] 273, 26: δηλαδὴ τὸ πρακτικόν. τοῦτο γὰρ τὸ διῶκον ἢ φεῦγον.

[64] 432 a 8.

[65] 431 b 3: καὶ ὡς ἐν ἐκείνοις ὥρισται αὐτῷ τὸ διωκτὸν· καὶ φευκτόν, καὶ ἐκτὸς τῆς αἰσθήσεως, ὅταν ἐπὶ τῶν φαντασμάτων ᾖ κινεῖται. Le sens à donner à ἐκείνοις est assez douteux de prime abord. Le pronom peut désigner les εἴδη, les φαντάματα on encore les formes sensibles. Nous adoptons la conjecture de Simplicius (273, 34) selon laquelle il désigné les αἰσθητά. Nous en tirons argument du fait qu'Aristote retourne ici au débat sur le νοῦς πρακτικός qu'il a laissé pour la digression sur le *sensus communis*, mais sans toutefois complètement oublier l'apport de sa digression puisque, à partir de 431 b 5, il semble de neuveau y faire appel. Or, dans cette digression, il a été surtout question des sensibles. C'est donc à eux que ἐκείνοις renvoie.

[66] 431 b 5 sq.

[67] *Journal of Philology*, XVII, p. 61.

spécialisé dans la perception des sensibles communs. Or ici, la torche en mouvement est expressément perçue par la vue, *τῇ ὄψει*. Simplicius, d'après lui, était conscient de cette difficulté, quand il proposait de lire: *τῇ κοινῇ ὁρῶν κινούμενον, γνωρίζει ὅτι πολέμιος* [68] et d'interpréter *τῇ κοινῇ* par *τῇ τῶν κοινῶν*. Bywater ajoute: " The antithesis here is simply between what we see (*ὁρῶν*) and what we only *as it were* see (*ὥσπερ ὁρῶν*), i. e. imagine; and it is weakened or rather utterly spoilt by the addition of a superfluity like *τῇ κοινῇ*—which seems due to some annotator who was aware that *κίνησις* was one of the *κοινὰ αἰσθητά*, but did not understand the Aristotelian theory as to how we know them." La raison présentée par Bywater est spécieuse et en réalité se retourne contre lui: C'est précisément parce que la torche est *κινούμενον* qu'elle est perçue par le sens commun: la mouvement n'est-il pas mis par Aristote au nombre des sensibles communs? Il est donc nécessaire qu' Aristote fasse ici mention de la *κοινὴ αἴσθησις*.[69] La phrase qui suit et qui s'oppose d'une façon générale à celle dont nous parlons nous le prouve: dans le premier exemple, il s'agissait d'une perception authentique du sens commun; dans le second, et c'est là le vrai sens de l'opposition que Bywater a pressentie, il ne s'agit plus du sens commun: il n'y a plus de perception proprement dite (*ὥσπερ ὁρῶν*), mais un travail de l'imagination et de la raison suppléant à l'inactivité du sens commun. D'où la conclusion: *καὶ ὅταν εἴπῃ ὡς ἐκεῖ τὸ ἡδὺ ἢ λυπηρόν, ἐνταῦθα φεύγει ἢ διώκει, καὶ ὅλως ἐν πράξει.*[70] La fonction assertive exprimée par *ὅταν εἴπῃ* résume l'activité du sens commun dont le rôle est précisément de *λέγειν* [71] et celle de l'imagination et de la raison sous leur aspect apophatique ou

[68] 274, 6 sq.

[69] L'antithése que Bywater prétend découvrir entre *ὁρῶν* et *ὥσπερ ὁρῶν* de la phrase: *ὁτὲ δὲ τοῖς ἐν τῇ ψυχῇ, φαντάσμασιν ἢ νοήμασιν ὥσπερ ὁρῶν λογίζεται καὶ βουλεύεται τὰ μελλοντα πρὸς τὰ πάροντα* (431 b 6-8) est inexistante ou du moins tout à fait secondaire. Une authentique opposition aurait été soulignée par des particules.

[70] 431 b 8-10.

[71] Cf. Γ, 2, 426 b 20 sq.

cataphatique.[72] On s'aperçoit ici comment le *sensus communis* peut participer à la vie pratique de l'homme et glisser du plan intellectuel sur le plan de l'action: καὶ ὅλως ἐν πράξει. On doit donc considérer la description qu' Aristote en fait ici, non comme une simple redite répétant sous une autre forme les analyses antérieures, mais comme une transposition de sa théorie et comme une application de ses conséquences dans une sphère qui n'est plus exclusivement théorique.

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[72] Cf. Γ, 7, 431 a 15 sq.

THE UNIVERSE AROUND US

PREACHERS are fond of alluding in their sermons to "Science"; by which they mean those branches of knowledge and inquiry which were called "the exact sciences" in Victorian days, in contradistinction to such sciences as theology, which was supposed to be inexact, unverifiable and therefore worse than superfluous.

That no cosmological science is truly "exact" is proved by its own vacillations. Who supports the Victorians now in their theories of infinite space or even in the still older "laws" of gravitation? The universe is now conceived as an entity which is indeed *uni-versus*—a totality of matter "turned" or curved so that its illimitability is an affair of going round and round the finite rather than straight forward into the infinite. Still despite such changes of major theory, the physical sciences can reasonably claim exactitude to a large extent. Although it is nothing new, the precise calculation of an eclipse would alone entitle astronomy to respect for its exactness.

Of all ages ours is perhaps the most tolerant. Other ages have been tolerant from incapacity to be otherwise, from ignorance, from indifference, from licentiousness, but ours is so of deliberation. We have indeed made a cult of toleration, perhaps to the point where toleration is no longer a virtue. Partly we are tolerant because civilization has grown so complex that to resent what is not directly suited to our inclinations would consume all our energies; partly, because as a result of its intricacy we have learned that in order to live we must let live. But, largely, we are tolerant because the spirit of science has descended upon us, and science has taught the fallacy of believing that theories are immutable.

At this time of day, a book on Science and Religion has to be very good indeed, if it is to be any good at all. The conflict

which raged so merrily two generations ago is now seen to have been unnecessary because due very largely to misunderstandings. Both sides have learned modesty; the war has been settled by a definition of boundaries. It has become increasingly clear, and more generally accepted, that the true aim of Science is description, rather than explanation; and since Religion is concerned with the ultimate meaning and purpose of things, with the "why" rather than the "how" there should, on that ground, be no possibility of conflict. A book on the relation between these two kinds of experience must deal with more fundamental matters if it is to be any help to man today in the task of bringing unity and depth and richness into his mental and spiritual life.

Perhaps the first question our imagined reader would put would be, "Is life, as we know it, possible on any other globe?" "The case for life existing on Mars, or any other planet in the solar system, can hardly be called a strong one"; and whether it exists upon the planets of other systems we are entirely ignorant.

Concerning the whole universe we may touch on three salient points. "Judged on our human scales of time, it is very old" (one thinks of Lear's address to the heavens, "if yourselves are old"); it is finite, contrary to Kant's opinion; and it is expanding, a discovery made in consequence of Einstein's theory. *Nebulae recede,* planets draw away from their centers, to the loss, eventually, of central warmth. Yet millions of years separate us from catastrophe—albeit "there is practically no room for doubt that the sun weighs many millions of millions of tons less than it did a month ago."

It is well known that on the general theory of relativity were built two different cosmologies, those of Einstein and De Sitter. They were thought to be rival systems, but Eddington pointed out that they were really limits, Einstein contemplating a universe with as much matter as it could hold, De Sitter a universe

with no matter at all; the actual universe might be intermediate between these limits according to how much matter existed. Sir James Jeans now endorses this suggestion as a result of calculations by the Abbé Lemaître that Einstein's universe is necessarily unstable. It must expand in its dimensions until it approaches a De Sitter universe, and must then continue to expand because De Sitter's universe possesses a tendency to scatter.

A difficulty at once arises. If the universe, which is all that there is, expands, into what can it expand? It is the old skeleton which lurks in so many philosophic cupboards: what lies beyond the confines of space and time? Difficulties over space and time led Kent to inaugurate modern idealism, and it is probably similar difficulties, though this is not stated, which have led Sir James Jeans, in contrast with most scientific workers, to make overtures to idealism. He suggested at the end of *The Universe Around Us* that, as it is no use going to the edge of the picture to find the artist, so it is no use going to the ends of space and time to find God, and this tentative approach to idealism becomes a whole-hearted advocacy in *The Mysterious Universe*. The universe which used to be around us has now become within us. If space and time are merely forms imposed on phenomena by the mind, then no difficulty arises over their extent. They have no more substantial existence than the meridians of longitude. Sir James Jeans follows Einstein in regarding space as finite (more precisely, the universe is closed in all its space dimensions). He takes a novel line, however, in asserting that time had a beginning a finite number of years ago, though it may have no end. There would be a blatant self-contradiction in a realist postulating a first moment of time, but all things seem possible for idealism, which has a very short way with dissenters. Sir James Jeans is led to do so by the importance which he attaches to the Second Law of Thermo-dynamics, with its attendant conception of a

universe running down from an energetic beginning to a "heat death." He does not believe that anywhere in space matter is being re-created out of radiation, nor does he see any value in the notion of cyclical universes, which would make time finite.

It is refreshing to find a scientist who can assert that the Creator must be outside the time and space that are part of his creation; and who can write: "The universe shows evidence of a designing and controlling power." This a return to a clear-minded tradition. Further, Sir James seems to have been struck with the orderliness of the universe, and to have felt the need of intrinsic and extrinsic causes for the harmony. He seems to ask himself whether the Universe, in its essential nature, is not Mind, albeit, created Mind.

His argument appears to run; God is Mind, The Universe was made by God, Therefore the Universe is Mind.

In this argument, Sir James seems to feel that he has reached the solution of the order of the Universe, both in its intrinsic and extrinsic causes; for the source of order is Mind. In short, he has endeavored to apply the principle that an effect must bear a certain likeness to its cause. But his fundamental thesis that God is Mind is perhaps open to question in this context. God is Mind, certainly because He is wholly immaterial and His Essence is His Existence; but is self-existent Mind His essential characteristic, especially when considered as Creator? That is to say, is mind the characteristic which distinguishes Him from all else?

It is true that a great many philosophers have thought so, including so great a thinker as St. Thomas; but, on the whole, it seems sounder to say that God should be considered primarily as Being. Being is the widest of all terms, and it is presupposed by all else, even mind.

God is being, and so is the Universe, but whereas the Universe is Being which owes its existence to another—to God;

God Himself is self-existing Being, owing His existence to none. He IS. Thus, too, He defines Himself, "I AM, who AM."

"Before Abraham was made I AM."

Now, if an effect resembles its cause; and if God, essentially is Being; then the Universe, considered as an effect of His action, will not be Mind but a kind of Being. As such, it will reflect in its own manner such of His essential characteristics as He desires; and we see that it shows a unity and harmony resembling, analogically, His perfection.

Sir James points out that the Universe shows evidence of a designing Power; that is, of a Being which has Mind. This feature is particularly noticeable to a mathematician. Order is stamped everywhere. Can we say as Sir James suggests, that it is a quasi-mathematical case in the Divine Mind that has made number take so prominent a part in the Universe? In a sense, most certainly, Yes; for the Universe could not show this mathematical aspect if number were not at least virtually in its cause. But can we say that number is the formal cause that makes the Universe what it is?

Number is bound up with matter. Number can be *thought* of apart from matter, certainly, but can number be totally dissociated from matter? This is questionable, for number is the measure of quantity; it cannot actually *exist* except in matter. On the other hand, the formal cause of a thing decides its essential nature; and this cause exists, in a manner, prior to the realization of that nature in matter. Thus that which we call a *chair,* may be of any shape or size. Its "formality" is, roughly, "something to sit on." Measurements and ratios only appear with the matter of a *particular* chair. Hence it would seem that number lies half-way betwen essential nature, and matter, and belongs rather to the material cause than to the formal.

From these considerations it would appear that the mathematical ratios of the Universe do not so much suggest that the

Universe is Mind, or that they have caused it to be what it is essentially; as that—to quote Sir James again—" the Universe is the effect of an act of thought ", and thus, by its order and harmony, shows " the evidence of a designing and controlling power Who chose the material quantities wisely to the end."

God is not the matter of the Universe—whatever we call it—but its Creator and Controller, standing as it were, apart.

The great six-foot reflector which Lord Rosse completed with wonderful engineering skill in 1845 was not surpassed in size, nor even equalled, until the present century was well under way; and its revelations were justly the admiration of the world. De Quincey starts with some thoughtful reflections on the age of the earth, inspired by a paper by Kant. He points out that " to tell us the *positive* amount of years through which our earth has existed—fifty millions, for example—would leave us in total darkness upon Kant's question: namely, What proportion does that amount form of the total career allotted to this planet? Is it the thousandth part, or the millionth? " It is thereby clear that his expectations of life of our earth far exceeded those of the early Christians, for example; and in justifying them in the face of the pessimism of the time he adduces some reasons which read perhaps a little queerly today:

> I ask peremptorily, Does it stand with good sense, is it reasonable, that Earth is waning, science drooping, man looking downward, precisely in that epoch when, first of all, man's eye is arming itself for looking effectively into the mighty depths of space? A new era for the human intellect, upon a path that lies amongst its most aspiring, is promised, is inaugurated, by Lord Rosse's almost awful telescope.

It will be seen that it is rather to the existence of the telescope than to its performance that De Quincey looks for light on his inquiry as to the earth's future. But his essay goes on to deal with that performance very skilfully and delightfully, and he also summarizes its triumphs by imagining the great author of it to speak as follows:

I found God's universe represented for human convenience, even after all the sublime discoveries of Herschel, upon a globe or spherical chart having a radius of one hundred and fifty feet; and I left it sketched upon a similar chart, keeping exactly the same scale of proportions, but now elongating the radius into one thousand feet.

It is not very clear how De Quincey arrived at these figures, but let us accept them as indicating an expansion of the visible universe in the ratio of one thousand to one hundred and fifty or about seven to one. We may regard the powers of a telescope in various ways: the one here selected apparently concerns its space-penetrating capacity, which is for many reasons just as important to increase today as it ever was. Lord Rosse's six-foot mirror has now been surpassed by the Mount Wilson one hundred inch; but the astronomers who have used this magnificent machine are already hoping for a three hundred inch—a mirror twenty-five feet across; and they are confident that it can be made and used if the necessary couple of million pounds can be provided. But, if made, it would scarcely represent so great an advance as De Quincey claims for that of Lord Rosse; its advance would be represented more nearly by three to one than by seven to one.

Let us, however, make him a present of this greater ratio; let us allow him to multiply it by ten or even one hundred, so that it becomes seven hundred to one. He might still have been aghast at the idea of extending our outlook in the ratio of a *million* to one; and yet we have been experiencing an expansion of about that order, not only in space but in time, during the present century, and chiefly in the last decade. Not very long ago we could only measure the distances of stars which could send us messages within a few years; if their light took more than a century to reach us they were out of our range. Now we confidently point to systems separated from us by millions of years, or even hundreds of millions. Again, De Quincey's speculative figure for the past age of the earth is fifty

million years; he does indeed suggest multiplying this by a million as regards its future, but rather to show his contempt for the pessimists than as a serious estimate. Today Sir James Jeans (and others with him) soberly makes this multiplication both for future and past.

The sun began life with the luminosity and mass of the brightest stars now existing, its birth, according to Eddington's suggestion, must have taken place some 10^{14} (one hundred million million) years ago. Other phenomena also, connected with double stars and spiral nebulae, point to about the same date for the origin of these bodies, and seem to suggest that, if the original hypothesis is accepted, a great outburst of creative activity took place at that remote time. It cannot be supposed, however, that "sudden, in a minute, all was accomplished and the work was done." Eddington's theory imposes an upper limit on the mass and brightness of a star, and the existence now of stars near that limit makes it imperative that we assign their birth to a much more recent time. But since the great majority of the stars seem to be approximately of the same mass and luminosity as the sun, Dr. Jeans's inquiries point to the possibility that a special productive event took place 10^{14} years ago.

If this is so, it invalidates an opinion at which Dr. Jeans recently arrived with regard to the uniqueness of our solar system in the universe. He has concluded that our solar system could have been formed only by the very close approach of two stars in the distant past; the material pulled out of one of the stars (our sun) by the attraction of the other having, in the course of time, formed the planets. The stars are so far apart that approaches of this kind must have been extremely rare, and, with the length of life of the universe hitherto accepted, they could not, according to the laws of probability, have occurred more than once or twice. The inference was that a system like ours was almost unique. But in the immensely longer period now contemplated, many more close approaches of stars might

have taken place, and there might be many other systems of suns and planets, possibly inhabited by creatures like ourselves.

The stars now stand out in space—space extending so far that their light takes hundreds of millions of years to reach us; and if the Mount Wilson project of building a mirror twenty-five feet in diameter is realized, as we hope it may be before long, we shall witness a further great extension.

To put the matter briefly, the giant and dwarf theory of evolution requires the brightness of a star to depend on the star's *age*; Professor Eddington has shown that, in all probability, it depends only on the star's *mass*. Eddington, however, suggested one possible means of reconciliation, and that was to make the star's mass itself dependent on age, so that, as the star grows older it grows less massive and less bright, the rate of loss of mass being equivalent to the rate of fall of brightness, according to the theory of relativity. But this would mean a greatly extended life for the star, because it would imply that a star would not die out until it had radiated away most of its matter, whereas up to now it has been supposed that the length of stellar life is such that the amount of matter radiated is negligible. It should be noted that Professor Eddington could offer no direct evidence for this view; nor did he advance it as more than a suggestion to be considered and investigated on equal terms with the possibility that the whole giant and dwarf theory might have to be rejected.

It is here that Dr. Jeans takes up the question. He considers certain cosmical problems in the light of Eddington's suggestion, and arrives at some interesting results. He finds that the loss of mass of the sun is about four million tons per second. How hazardous speculations on these matters are may be seen from one of many considerations. We take account of the loss of mass of a star by radiation, but we take no account of what becomes of the radiation after it is discharged because we have no grounds on which to form a hypothesis. Yet the theory of

relativity, which tells us that radiation of energy entails loss of mass, seems to be telling us also that the Universe is finite in volume, and that the radiation that has been sent out for so many years is stored up in it somewhere and in some form. For all we know to the contrary, a star might be recreating its mass from the energy-filled space around it, and, if so, hypotheses based only on its rate of decay have no weight whatever.

It is believed on very plausible grounds, that a star begins its life as such in a very rarified condition and at a comparatively low temperature. As it grows older it steadily contracts and becomes gradually hotter by reason of its contraction. This goes on until a certain stage is reached at which the rate of shrinkage is retarded, though not reduced to a standstill, owing to the resistance of the internal parts to further compression. The lower rate of shrinkage is not able to raise the temperature of the star any higher, so that beyond this point the star begins to cool and slowly passes once more through the succession of temperatures through which it previously rose. At the same time it gets smaller and smaller, though at a greatly reduced rate, until finally it becomes very dense and too cold to radiate enough light to make it visible.

While the star is getting hotter it is known as a *giant,* and during the period of its cooling it is known as a *dwarf.* Giant stars have much greater volumes and radiating surfaces than dwarfs, and therefore, though their temperatures cover the same range, they radiate much more energy, i. e., they are much brighter. Throughout the giant stage the brightness of a star probably decreases, but by only a small amount, because the gradual reduction of its surface area is approximately balanced by the increased radiation per unit of area caused by its continuously rising temperature. During the dwarf stage, however, the temperature is falling, and the surface area is decreasing, so that on both counts the rate of radiation diminishes

as time goes on; consequently the brightness of the star diminishes at a comparatively rapid rate.

We may summarize this life-history of a star, then, roughly by saying that it consists of two parts—a giant and a dwarf stage. During the giant stage the star gets continuously smaller and hotter and has a very slowly decreasing brightness; during the dwarf stage it gets continuously smaller, cooler, and much more rapidly fainter. The mass, or quantity of matter in the star, has been assumed to remain sensibly the same throughout the evolution. This is probably not quite true because, according to the theory of relativity, the energy radiated by the star is equivalent to a certain mass which the star must lose by the act of radiation; that is to say, in giving out its light the star is giving itself away as well. An enormous amount of radiation, however, is necessary before the mass falls appreciably, and it has always been tacitly assumed (in the absence of evidence to the contrary) that the amount of matter lost in this way during the period of a star's life is inappreciable.

Even the solar system has been very extensively remodelled. The old nebular hypothesis has been definitely abandoned, and a "collision" theory has been evoked to explain the formation of the planets, apparently with very satisfactory results. The cigar-shaped filament, tugged out of the sun by a passing star, seems to condense very nicely into the planets we know. Also, the age and probable future life of the system can be estimated much more accurately than ever before. The new estimates proceed on the assumption that matter is annihilating itself in the stars—a theory undreamed of in Sir Robert Ball's time. This theory is made possible by modern researches on the atom, and we find, indeed, that the whole of the new astronomy is profoundly influenced by these researches. The new physics has thrown a flood of light in all sorts of regions where Sir Robert groped in darkness. Observationally, also astronomy

has greatly advanced. The amazing variety of the stars passes what anyone could have suspected.

And yet the modern astronomical universe, although infinitely richer, is, in a way, smaller than Sir Robert suposed it to be. He imagined that space, at any rate, was infinite, even if the total number of stars was finite. But it is now held, in accordance with Einstein's theory, that space is finite. It has no definite size, however, for, according to the latest theory, it is continually expanding.

Apart from the usual difficulties incidental to idealism in general, certain others are raised by Sir James Jeans's own form of it. The only type of thought of which we have cognizance is that of her higher animals, and yet, on Sir James Jeans's own splendid showing, they occupy a wholly insignificant place in the universe of which they are partly creators. Most of us, could we have created a world by hard thinking, would have moulded it nearer to our heart's desire and allowed just a little touch of vanity to creep in. Then there is Sir James Jeans's view that the Architect of the universe must now be thought of, not as a biologist or an engineer, but primarily as a pure mathematician. It is true that the concepts of pure mathematics have been far more successful than the concepts of biology or mechanics in interpreting the universe, but is not that a result of the nature of mathematics rather than of the universe? If God is best conceived as Christians have asserted, under the guise of a loving Father, then it is to be expected that the application of this concept of nature would be an obscure business, for it is precisely the nature of a Father's love that it exists amid difficulties and when least expected. But the case is different with mathematics, whose ideal is clarity rather than richness. If there had been difficulties in applying the tensor calculus to the world it could only have been because tensors were unfitted for describing the world. Undoubtedly the Creator of the world must be conceived, among other things, as a pure mathematician,

but mathematical prowess must not be thought to exhaust the divine attributes.

But I do still feel—though it is comforting to find scientists coming back to a "First Cause" which is now produced as explaining effects not otherwise explicable—that the scientists, who in the last generation thought they had disproved God, should not now too rashly assume that they have proved that God is. The microscope, the telescope and algebra, are still working on the old plane, whether the mere sun and moon are being considered or stars unimaginable millions of millions of miles away. However, it is something that the scientists of the age have outgrown the old hard temper. Sir James says of the theory of relativity:

> It regards time merely as a fourth dimension to be added to the three dimensions of space, so that *post hoc propter hoc* may be no more true of a sequence of happenings in time than it is of the sequence of telegraph-poles along the Great North Road.

A generation ago any man of free mind was tempted to say, whenever he heard a scientific person dogmatize, "There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy." They went into a cave: they have now dug through into daylight, bringing a good deal with them; we are probably, now, in sight of the time when the theologians, the poets, and the scientists will walk hand in hand. What interest has any of them, however varying their sensual or emotional faculties, except in truth?

The supreme point of our Western civilization was when it was all united under the rule and guidance of the Christian religion; and it is in the return to that unity that the possibility of checking the dissolution of the West will lie. "However far the process of disintegration has gone, there is always a possibility of regeneration, if society recovers its functional equilibrium and restores its contacts with the life of nature."

Following the Golden Age of Greek science, the mathematical theory of nature came into the ascendency. This position was maintained until Thomas Aquinas shifted Catholic theology from the Platonic metaphysics that dominated St. Augustine to the metaphysics of Aristotle. Now, because of the discoveries of contemporary science, Platonism is thrusting itself above the surface of thought again. This is a very interesting fact. But perhaps the more interesting circumstance is that one of our contemporary physicists should diagnose his own case, and explicitly recognize what it is that he and certain of his colleagues are maintaining.

As science (if that is the word) gets nearer the ultimate secret, the less intelligible does it become to the average man, to whom the quantum is a kind of snark and square roots of minus quantities suggest bedlam. We are faced with the possibility that some very advanced thinker will one day discover the solution, and be unable to convey it to any other mortal. But perhaps it will be simpler than it looks.

One is reminded forcibly of Francis Thompson's " where the wheeling systems darken and our benumbed conceiving soars ". Light year—186,000 miles (the speed of light) x 60 (seconds) x 60 (minutes) x 24 (hours) x 365 (days)—is piled on light year to compute space, and millions of years are added to millions of years to gauge time. Yet space is finite, for " we may think of the radius of space as hundreds of millions of light years at least " (*The Universe Around Us,* p. 81), and time must have had a beginning since " the present matter of the universe cannot have existed forever: indeed, we can probably assign an upper limit to its age of, say, some such round number as 200 million million years." A finite world with an " in-the-beginning " awakens old, old thoughts!

Planets, he says, are very rare in the universe: and we know of no type of astronomical body in which the conditions can be favorable to life except planets like our own, revolving round a sun. . . . Apart

from the certain knowledge that life exists on earth, we have no definite knowledge whatever except that, at the best, life must be limited to a tiny fraction of the universe. Millions of millions of stars exist which support no life which have never done so and never will do so.

Of course, the Mars canals do not exist; and no evidence of conscious life in the universe, other than on our own planet exists. Thus we are brought back, for theological though not for cosmological purposes, to a simple Ptolemaism. Giordano Bruno declared that "There are endless particular worlds similar to this of the earth"—a declaration which outran the evidence in his day and is disowned by men of science in our own. It is now proved that the sun has a galactic motion of about 200 miles a second, moving faster than the outermost but slower than the central stars of the system.

The farther investigation proceeds the more modest the investigators become. It is not long ago that vortex rings were the latest thing, and (we were asked to suppose) the last thing. This being so, Mr. J. C. Squire was tempted (as a mere lay observer with a sneaking feeling that the scientists will ultimately prove what the poets have always known) to write:

> The world is full of many things,
> Professors, cabbages and Kings;
> But what's become of Vortex Rings?
>
> All now is waves; and certain lots
> Elect to tie themselves in knots,
> Producing mountain, fish, and tree,
> And Dr. Jeans, and you, and me;
> If you can't follow what that means
> Consult the books of Dr. Jeans.
>
> And then you may assent to this
> Provisional hypothesis,
> Although I fear
> It's fairly clear
> There'll be another one next year.
>
> Yet rings there, ere the theory fades,

> No cheer from Berkeley in the shades!
> However dazzled, don't forget
> Even as wave, 'tis matter yet.

In another and true sense, the universe is a thought in the mind of God—*verbum Dei*—and discussion does not become futile. This thought was first in the mind of God as the exemplary or "modeling" cause, and then was externated, brought into being, actualized outside of God, by His omnipotent *fiat*.

It must be fully admitted that the mathematical explanation may prove to be neither final nor the simplest possible. The river of knowledge is a winding one, flowing now East, now West. No scientist who has lived through the last thirty years is likely to be too dogmatic either as to the future of the stream, or as to the direction in which truth lies. So that our main contention can hardly be that the science of today has a pronouncement to make. Perhaps it should rather be that science should leave off making pronouncements; the river of knowledge has too often turned back on itself.

With this caution in mind, it seems at least safe to say that the river has made a sharp bend in the last few years. Thirty years ago we thought or assumed that we were heading towards an ultimate reality of a mechanical kind. Today there is a wide measure of agreement, which on the physical side amounts almost to unanimity, that the stream of knowledge is heading towards a non-mechanical reality. Mind no longer appears as an accidental intruder into the realm of matter.

But if the modern logic of science be rigidly applied; if scientific laws are descriptions, not explanations; if they describe how God usually acts, then a miracle is an example of how God acts when, for sufficient reason, the usual method is insufficient. It is always well to have a very wide margin of agnosticism in history and science, because all sorts of new things may be discovered.

Through his physics he has been led into a world where, on occasion, he exchanges words with the poets and the philosophers. "Everything is a thought in the mind of God": "They have all gone into the World of Light": "I saw Eternity the other Night, Like a Great Ring of Endless Light."

There is a gulf between such personality as ours and the personality of God, or the personality that is in God. We are still aghast before the spectacle of the universe in which He operates. What some of our modern scientific thinkers are feeling is that the world is so vast that we cannot very much matter in it; and yet I know the stars are there, and if they are nothing more than Sir James Jeans has found out about them, they do not know I am here. I beat the stars. And when you come to those ranges of knowledge that the modern man has mastered and conquered, you see, however small his body may be, that by his mind he is greater than these merely measurable things, for he who measures is greater than that which he measures, even though his body is so much smaller.

When you come to the choice between the things of life, which is the distinctive feature of the spiritual nature as against the merely intellectual, you discover a sense of obligation which is absolute, a sense of something which on every account I must do, or on account must I do. In the reason and the conscience there is something which is demonstrably ultimate, and beyond which in principle it is not possible to go. Here we have something we may naturally expect to find akin to whatever is ultimate in the universe itself. God is not merely a word to represent the infinite power of the world, but the good that is there too. Good or bad is the discovery by the mind of what is akin to itself in the thing it contemplates. Wherever you find what the mind is answering to it, there you have satisfaction. That is, what we call good, and that at its height is love; but also if God is not only the supreme power and the supreme good, He must also be love; and we are ready for the

revelation which came in Jesus Christ of God revealed as perfect love. And I want to leave you for this moment with the picture that St. John gives of what our Lord did in a moment of special consciousness of His Divine mission and authority, knowing that He came forth from God and went unto God. What did He do? He did not sit on the throne and invite His disciples to bow before Him in homage. He girded himself and began to perform for them the act of service which was regarded as the most menial one could do for another. That is what He thought it was like to be God. The Christian conception of God begins with an exaltation of the Divine Majesty; the greatest the mind can conceive, when the greatness and the far-reaching power, might and authority of God exhibit themselves for man, it is by washing the disciples' feet.

Cardinal Wiseman said that if we could contemplate all God's works in the visible and in the moral world,

> not as we now see them, in little fragments, but as woven together in the great web of universal harmony . . . there can be no doubt but religion, as established by Him, would appear to enter and fit so completely and so necessarily into the general plan, that all would be unravelled and destroyed, if by any means it should be withdrawn.

The age of the world is great enough for our imaginations, even according to the Mosaic account, without borrowing any years from the geologist. It is a wearisome while. And yet the lives of but sixty old women, such as live under the hill, say of a century each, strung together, are sufficient to reach over the whole ground. Taking hold of hands, they would span the interval from Eve to my own mother. A respectable tea-party merely—whose gossip would be universal history. The fourth old woman from myself suckled Columbus—the ninth was nurse to the Norman Conqueror—the nineteenth was the Virgin Mary — the twenty-fourth the Cumæan Sibyl — the thirtieth was at the Trojan war, and Helen her name — the

thirty-eighth was Queen Semiramis—the sixtieth was Eve, the mother of mankind. So much for the

> "Old woman that lives under the hill,
> And if she's not gone she lives there still."

It will not take a very great-granddaughter of hers to be in at the death of Time.

Design—Creator—Thinker of the creative thought—what scandal these words were a few years ago in science! And even today many seem to hesitate in the name of science to draw the inevitable conclusion: "In the beginning was the Word, and the Word was with God, and the Word was God. All things were made through Him, and without Him was made nothing that was made." If we know Him, Sir James's closing words will be true for us in a sense not envisaged by him: "The main message of astronomy is one of hope to the race and of responsibility to the individual—of responsibility because we are drawing plans and laying foundations for a longer future than we can well imagine." For us, the future is an eternity when, as we hope, we shall see the great Thinker face to face—unendingly. There will be no light years then, "for the city hath no need of the sun, nor of the moon to shine in it. For the glory of God hath enlightened it, and the Lamb is the lamp thereof."

The only novelty is that the date of the globe's fate has been deferred by aeons. Of what significance to mankind is the delay? For Jeans, its significance is that of hope and responsibility. "We seem," he says (*ibid.*, p. 343), "to discern that the main message of astronomy is one of hope to the race and of responsibility to the individual—of responsibility because we are drawing plans and laying foundations for a longer future than we can well imagine." But why should the race feel hope at the prospect of merely enduring *longer* than it can well imagine? How does the individual incur responsibility on

account of the mere *number* of generations which are likely to succeed him? Alone the conception of the universe as fundamentally numerical can warrant such a ground for hope and such a basis for responsibility.

Sir James also contends that astronomy assists man to a proper apprehension of his importance in the universe. He tells us that in a model, where the earth's orbit is represented by a circle one-hundredth of an inch in radius, the nearest star, *Proxima Centauri,* is 75 yards distant, and the farthest object so far discussed by astronomy is 1,000,000 miles away. He continues (*A and C.,* p. 5): "The inhabitant of the earth may well pause to consider the probable objective importance of this speck of dust to the scheme of the universe as a whole."

But why should the earth's importance depend on its magnitude relative to some larger magnitude? Is an elephant necessarily more important than a flea, or a tall man than a short one or a midget?

But what on earth, or in the name of all the nebulae, does it matter whether our world and our race survives for a million million years, rather than a million years? We are, as Sir James is frequently at pains to point out, unable to grasp such figures: the one thing we *can* grasp is that the extinction is extinction; and it is small comfort and small encouragement to us for a scientist to get up and tell us that our qualms and questions can be dismissed because the earth is going to last much longer, before its inevitable doom, than some other scientist said it was going to last. Each of them brings us to that Victorian favorite, the Last Man, who is beyond our help; and we are now invited to contemplate the last star.

The final state of the universe will, then, be attained when every atom which capable of annihilation has been annihilated and its energy transformed into heat-energy wandering for ever round space, and when all the weight on any kind whatever which is capable of being transformed into radiation has been so transformed.

But is not the phrase "final state" strange? Does it offer us any clue at all to a conception of the Universe? It is bad enough to be asked to accept the Einsteinian conception of a limited space: the mind reels before Sir James Jeans's notion of an island in time, an epoch which should witness the creation and destination of all we apprehend with our senses, a computation of years which can set an end not merely to our world, but to all worlds, a computation which is based on our capacity to contemplate ends rather than beginnings. How can there be a final stage any more than an initial state? If there was an initial state, what made it change, and why, having changed, should it not change again?

"Lone star would I were steadfast as thou art," said Keats. Had he read Sir James Jeans he would know that the stars are anything but steadfast: the red in the spectrum shifts, and they are all moving at thousands of miles an hour. The earth moves, the sun moves, the solar system moves, in the deeps beyond all the universes move. We can think of them thus as parts of a tremendous machine which revolves, "The armies of unalterable law", and we can imagine the earth as a speck of destructible dust in unthinkable space: yet we still return to our wonder about ourselves, "Whence came we, and whence go we", knowing ourselves able to find consolation in the points of light above us, and a stretch which will enable us to shout and die for a cause not our own. The stars do not do that, nor the nebulae. Man remains obstinately Ptolemaic, though the stars do not: he finds it difficult, from day to day, to realise that Uncle William will die, much less a star. To know the size and motions of Betelgeuse is interesting: as interesting as to know the size and motions of an earwig. Our mystery remains, and 6×10^{56} is but a blind. All facts are interesting, and all knowledge worth pursuing: but, as to our purpose, it is no use asking for bread and being given a disintegrating stone, millions of miles away.

The author recurs to this comparatively small range of our present human experience in some eloquent concluding passages of his book:

> Take a postage stamp and stick it on to a penny. Now climb Cleopatra's needle and lay the penny flat, postage stamp uppermost, on the top of the obelisk. The height of the whole structure may be taken to represent the time that has elapsed since the earth was born. On this scale, the thickness of the penny and postage stamp together represents the time that man has lived on earth. The thickness of the postage stamp represents the time he has been civilized, the thickness of the penny representing the time he lived in an uncivilized state. Now stick another postage stamp on top of the first to represent the next 5,000 years of civilization, and keep sticking on postage stamps until you have a pile as high as Mont Blanc. Even now the pile forms an inadequate representation of the length of the future which, so far as astronomy can see, probably stretches before civilized humanity.

The question naturally arises whether Sir James Jeans really means that no serious accident is likely to happen to us in such an appallingly long future: is it not possible, for instance, that some star may run into us and cut our future short for ever? He has, however, thought over this matter pretty thoroughly, and it may soothe the nerves of those who have to cross our busy streets to learn that in the astronomical world the danger of being run down is distinctly smaller. "We would have to wait about a million million million years before a star ran into us".

On the other hand, this calculation deepens the mystery of our existence, which dates, according to modern opinion, from just such an excessively rare encounter. About two billion years ago, the tidal disturbances raised in our sun by the near approach of a passing star detached from it our earth and the other planets. If such events only occur once every million million million years, we ought scarcely to have had a chance of coming into being; and it may well be that at the present moment our planetary system is the only one in the universe. This gives a new turn to the suggestion made some years ago by the

late Alfred Russel Wallace; but the reasons he advanced in support of it have crumbled away. He relied largely on the *central* position of the sun in the universe for the reasons why its planetary system might be unique; and although his statement had to be modified when it was presently realised that what he had regarded as the whole universe (following the orthodox views of the time) was merely an individual system of stars, characterized by the Milky Way or Galaxy, it was still supposed that the sun occupied a nearly central position in this restricted stellar system. This belief must now be adandoned.

Herschel, and Kapteyn appear to have been in error in supposing the centre of the galactic system to be in the neighborhood of the sun; Shipley believes that it lies somewhere in a massive starcloud in the constellations of Scorpio and Ophiuchus at a distance of 47,000 light-years from the sun. There is what Shipley describes as a "local system" of fairly bright stars surrounding the sun, and the error of identifying this with the main galactic system has apparently been responsible for a large part of the confusion which has hitherto beset the problem of the architecture of the galaxy.

He thinks of our stellar universe as having had a beginning, though that beginning is unthinkably remote, tens of millions of millions of years ago; and as evolving within a space which is inconceivably vast, yet not infinite in the absolute sense. At the period of that "beginning" all space was filled by what he describes as the primeval nebula, of inconceivable though calculable tenuity: it was a thousand million times more tenuous than the gaseous substance on the fringes of the immense nebulae of outer space, which the largest telescopes reveal. And the thinness of the substance of these nebulae in comparison with water is expressed by a fraction with twenty-two figures in the denominator. He expresses the tenuity of this material by saying that "a single breath from the lungs of a fly could fill a large cathedral with air of this density."

A student of Oriental philosophy is at once struck by the

close likeness of the Jeans world-concept to that of ancient India, in the centuries before the earth-centered Ptolemaic astronomy combined with the chronology of the Hebrews to constrict all cosmic thinking. Thus we find the Buddha saying, twenty-five centuries ago, in the *Discourse of Beginnings:*

> The upper regions of space are one with those below, and wholly dark. Then, after the lapse of a long period, a great cloud arises. At first it rains with a very fine rain, and then the rain pours down in streams. When this cloud has filled all space throughout a hundred thousand times ten million worlds, it disappears. And then a wind arises, and rolls the water into one mass, which is round like a drop on the leaf of a lotus.

If we add that both Pali, the language of the Buddhist scriptures, and Sanskrit possess a numerical system in which it would be easy to express a hundred million light-years in feet or inches, and "periods of the order of a million million years" in minutes or seconds, we have the close kinship between the thinking of Jeans or Eddington and that of the student Orient.

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BOOK REVIEWS

Evolution and Theology. By E. C. MESSENGER. (With a Preface by C. Lattey, and an Introduction by C. L. Gonway). New York: The Macmillan Co. Pp. xxiv + 313.

This is a very careful study in expository, historical and critical theology, obviously the fruit of long preparation, a continuation and complement (one may surmise from the author's antecedents) of the work of the late Canon Dorlodot in the same field. While sympathy for evolutionism is writ large all over the book, the reader must not expect to find in it any support for the theory on scientific grounds, for that is beyond its scope. It is confined to a careful endeavor to determine exactly what revelation and theology have to say concerning the problem of organic origins. After a discussion of general principles bearing on the sources of revelation and the Church's magisterial office it proceeds to the theological aspects of the origin of life, then the origin of Adam as head of the human race with a distinct treatment of Eve's formation, ending with a summary and conclusions from which may be understood in clearest terms MESSENGER'S own attitude toward the whole thorny problem.

The inquiry into the minds of Ephrem, Basil, Gregory Nyssa, John Chrysostom, Ambrose, Augustine, and other Fathers of the Church is conducted with freshness and vigor, displaying profound acquaintance with their writings. The same may be asserted of the examination of the mediaeval scholars: Bonaventura, Albert the Great, Thomas Aquinas and some of the later Scholastics. The historical survey of each aspect is carried down to the modern representative theologians: Lepicier, Janssens, Tanquerey, and others. To Gregory Nyssa "in some sense a thorough-going evolutionist" (p. 204) is accorded more ample space; also to Augustine, who (p. 203) "says definitely that the body of man was contained completely in the original causes created at the beginning of time." Nevertheless, in the chapter on "Patristic Objections" is the candid admission that beyond doubt (p. 201) all the Fathers, save only Gregory Nyssa, "really thought that Adam's body was formed directly from inorganic matter. But there is nothing surprising in this. Scripture is silent about any intermediate stages, and these Fathers were commenting on Scripture. But it must not be forgotten that Scripture is equally silent about any intermediate stages

in the formation of the sun, moon and stars, and that there accordingly the Fathers are silent as well. In any case it would, we think, be difficult to show that the Fathers were definitely teaching as of faith that Adam's body was formed directly from the dust." Secondary causes play a very active active part in man's return to dust, why not also in his origin from dust? Scripture emphasizes the activity of the First Cause; says nothing of the process, whether man was formed from the earth directly or indirectly.

Exception is taken to the opinion of those, e. g., Dr. McKeough in his excellent work *The Meaning of the Rationes Seminales,* who presuppose that St. Augustine must be interpreted now as he was interpreted by St. Thomas in the thirteenth century, a principle which MESSENGER reprobates as historically unsound and brings forward Professor De Wulf for backing. "So great were the respect and reverence that St. Thomas felt for the Doctor of Hippo that he could never bring himself formally to set up his own opinion against the latter." De Wulf says that St. Thomas, while transforming the meaning of St. Augustine's statements, offers this defense: "In multis quae ad philosophiam pertinent, Augustinus utitur opinionibus Platonis, non asserendo, sed recitando!" MESSENGER points out (p. 166) "that according to St. Augustine the six days of Genesis I all represent the single moment of the beginning of time, when all things were created causally, while the second chapter of Genesis gives the actual order of appearance in the course of time."

Augustine really thought it likely (p. 175) Adam appeared as an adult, and (p. 204) was the first living being to appear. Though these opinions be in accord with Augustine's *rationes seminales*, it is difficult to see how the organic evolutionist can derive much comfort from them. MESSENGER is satisfied (p. 204) "there is no certain argument from tradition against evolution of any kind, or organic evolution in particular, save in the case of the human soul, provided God's activity as First Cause is insisted upon. The theory must be disproved, if it is to be disproved, on other grounds."

When MESSENGER discusses the primitive origin of life, his fondness for evolutionism betrays a degree of bias. In italics on page sixteen he concludes that "Holy Scripture, according to its plain and obvious sense, definitely teaches the origin of all living things from inorganic matter, by what may well be called 'spontaneous generation'." He finds it difficult to see how Janssens' failure to put the origin of living things from inorganic matter among the elements of revealed truth is to be

"reconciled with the complete veracity of the Scriptures, and we prefer to hold that Scripture really teaches spontaneous generation, and that this must accordingly be accepted as true." Does not this come pretty close to saying that theologians maintaining the necessity of an extraordinary divine intervention in the first appearance of life cling to a dogmatically unsound position?

To be sure, many Fathers and Schoolmen allowed spontaneous generation, the production of plants and animals by the active power of terrestrial elements, St. Thomas, in particular, teaching that plants were produced by the active power of the heavens and the passive potentiality of the earth. In later times, however, after Pasteur's experiments the principle: *omne vivum ex vivo,* has been generally accepted; and modern theologians argue with Suarez—a line of thought questioned by MESSENGER—that the earth could not have had in the beginning the power of spontaneous generation, since it has not now such a virtue. As Saints Thomas and Albert, owing to erroneous physical and biological ideas, appealed to the stars as the secondary causes in the origin of life, may not the ascribing of active powers to terrestrial elements, which constituted the hitherto accepted tradition, be based also on erroneous physical and biological ideas?

The very foundation of scientific induction is the constancy of nature's laws. Inorganic nature capable by itself of producing life then and incapable now involves a change of nature, unless it be, as Haeckel contends, that cosmic forces then operated under conditions of which we are now ignorant. Yet we do know what conditions are required for new life now, and the laboratory can supply them all, save only the prerequisite vital force. By a philosophical necessity, to escape the alternative of a Creator God, Haeckel postulates spontaneous generation, while MESSENGER urges it in the effort to establish the principle of Christian naturalism, which finds it "prudent to magnify rather than restrict the scope of natural powers placed in things by God." Demonstration is lacking to the one as to the other. It is possible that the sun when living beings first appeared on the earth gave out much more ultra-violet radiation than now, which with other unknown physical activities may have sufficed to form living protoplasm. But, for the present, the preponderance of evidence points to a divine intervention in the passage from the inorganic to the organic.

Spontaneous generation is generally understood by theists to obviate the necessity of special intervention on God's part, supposing only

the divine concurrence, requisite as well in biogenesis. Spontaneous generation in the sense that the earth, after receiving an extraordinary power from God, could have produced living things is not spontaneous generation at all, but practically what opponents of the theory call divine intervention, limiting the causality naturally inherent in inanimate matter to the material or passive kind. Quite different from claiming spontaneous generation to be among the elements of revealed truth is the author's concluding counsel that Catholics should welcome the event, "if science could prove the reality of spontaneous generation," a recommendation which we would extend to every demonstration of reality.

Here we may point out what appears to be a verbal slip on page sixty-three. "Christian antiquity was definitely in favor of the idea that living beings were produced by the active powers implanted in organic (inorganic) matter by the Creator."

The attitude of the Scholastics, headed by St. Thomas, favors the idea that Adam's body may have been the result of a process, to which secondary causes, both angelic and terrestrial, contributed. St. Thomas (p. 212) must really be speaking on the matter of Adam's body before it reached the particular state calling for animation by the rational, i. e., immaterial soul. That is, he must be thinking of Adam's body in some pre-human or potentially human state—something very like a human body—something on the way to becoming a human body—indeed almost a human body—actually becoming a human body when the spiritual soul was infused by God. The strength of the argument rests on the value of the Scholastic supposition of successive forms—plant, animal, rational—vivifying the human embryo. This mediate animation theory MESSENGER confidently accepts along with Catholic philosophers generally. Cardinal Mercier regards as possible the immediate animation of the embryo by the intellectual soul, though he asserts it is equally possible and much more probable that the soul is created during the course of embryonic life, modern embryology corroborating the speculations of the old Scholastics. Thus, while Catholic philosophers accept the theory, it is passing strange that the majority of Catholic theologians definitely reject it, among whom Noldin may be cited as representative. (Vol. II, p. 331, edition of 1928), "Hodie recepta doctrina est, foetum humanum in ipsa conceptione vel non multo post ab anima rationali informari et vivificari; quando scilicet semen virile cum ovo feminali unitur, quae unio aliquot horis, quandoque etiam aliquot diebus post conjugalem copulam con-

tingit. Quare distinctio inter foetum animatum et inanimatum in theologia non amplius attenditur."

A novel explanation is proposed for the formation of Eve. It was truly supernatural, yet also connatural and indicative of a very real organic evolution, inasmuch as a small portion of Adam's body developed into a complete female, a process analogous to the a-sexual generation of some animal forms, in accord with the view that every organic cell contains the radical virtuality of the species. The result is to be attributed to the divine omnipotence with the active co-operation of Adam; and so (p. 273) "provided we bear in mind the elevation of Adam to the supernatural state, it fits in perfectly well with the theory of the origin of species by organic evolution."

The greatest interest of MESSENGER'S book lies, we think, in his valiant attempt to interpret the mind of the Holy See on the evolution problem. Keenly alive to the prejudices of fundamentalists, he merits in generous measure a glory similar to that which he himself (p. 63) recognizes as belonging to those scholars who knew how to separate the wheat from the chaff in the struggle which was waged in the thirteenth century before the system of the pagan philosopher Aristotle triumphed against the powerful influence of ultra-conservatives who found support for a time in ecclesiastical circles. While he has entered the lists as champion of evolutionism, or what he describes as the "Principle of Christian Naturalism," the "suave Providence of God," making use of secondary causes wherever possible, in keeping with the divine wisdom: *melior est causa causae quam causa causati,* nevertheless at the beginning and at the end of his work he professes himself as predisposed to submit to the decisions of the Church.

The insistence of the Biblical Commission on the historical truth of the early chapters of Genesis and, in particular, the fact that man was the object of a special creation does not militate against organic evolution. "The formula, peculiaris creatio hominis, far from reproving the doctrine of evolution as applied to man's body, was deliberately chosen in order not to reprove it. . . . The commission does not even say that there is something special to the first man which does not apply to every other man." (p. 228) It is suggested (p. 276) that *peculiaris* might refer only to the origin of the human soul.

A chapter is devoted to the views of Mivart, Leroy, Zahm and others and the action taken thereon by the Holy See. Mivart's own words may be quoted from *The Nineteenth Century* (February, 1893): "My

Genesis of Species was published in 1870 and I do not hesitate to advance in this book the idea that the body of Adam had to be derived from an animal other than man, in which a reasonable soul had subsequently been infused. Great outcries have been made against this idea, but I sent my book to the Sovereign Pontiff, and, soon after, Pius IX kindly accorded me the doctor's hat which the regretted Cardinal Archbishop of Westminster sent me in a public ceremony." Père Leroy, in a published work of 1891, voiced the opinion that "God, by creating the human soul and infusing it into an animal organism, could truly be said to have made thereby the human body, and no other divine intervention would be required." This was judged untenable by competent authority at Rome, and Leroy retracted what he wrote and withdrew his book from circulation. In 1899, Dr. Zahm, who saw no reason why the theory of evolution should not be applied to man, provided one held the special creation of the soul, wrote to his Italian translator to withdraw the book from sale in deference to the Holy See, which he had learned from unquestionable authority was opposed to its further distribution.

These were private ecclesiastical acts concerned more with the opportuneness of the discussion than the theological truth; and they occurred more than thirty years ago. Recognizing the prudence of the authorities discouraging any public agitation at that time as being dangerous to the faith of the multitudes, MESSENGER ventures the query that possibly now, when the minds of people are more familiar with the question, a discussion at least among theologians need not be regarded as dangerous, remarking (p. 239): "It is, to say the least, very significant that when the Holy See did speak officially and publicly, namely in 1909, the terms used were not such as to imply that the question must be taken to be a closed one." He seems to agree that it would be rash to teach as positively probable that extreme form of "mitigated evolution," which, while granting the immediate creation of the soul, maintains that human organisms arose by natural and spontaneous filiation from an animal source. In a statement of his own view (p. 245) he is careful to affirm some intervention on God's part over and above the ordinary divine concurrence in the formation of the first man's body, asserting however that this is not incompatible with the activity of secondary causes, which may have served as instruments of the divine intervention, God's direct action being required to prepare the embryonic body for the infusion of the rational soul. This appears to be a very mitigated form of evolution, a compromise

between direct derivation from the brute and immediate creation. As an hypothesis it offers a plausible answer to the problem of the missing link between the anthropoid and the human body.

The author feels he has demonstrated that Christian tradition is not so definitely against evolution as has been represented. He concedes the conservative attitude of modern theologians to be perfectly reasonable since science can offer no convincing evidence. Indeed, from the nature of the case, science may never even approximate a demonstration; yet this, we may remark, does not lessen the perennial interest of the problem—fascinating because insoluble!

Nevertheless, it is a question how far it may be wholesome to emphasize, as the book under review does, the immanence of God in His world without due regard to the transcendence of God above His world. No one denies that greater power is exercised in making things make themselves than producing effects directly, or in continual interference, which seems to limit the initiator's power; yet the action of the principal cause is not so manifest. Though there is a grandeur in MESSENGER'S concept of Christian naturalism, at the same time the popular mind, nay also the scientific mind, needs to be arrested now and again by a direct intervention of the Creator God to escape that unchristian naturalism, which leads to deism or pantheism or atheism. Therefore, to adopt the argument of fitness, the "suave Providence of God" may be discerned in the view that man's body was immediately formed by God from the earth with no connection with animals, lest man regarding himself to have an animal origin as well as sharing an animal nature may minimize the difference between himself and his animal cousins, which lies in the spirituality of his soul.

As a matter of fact, Darwin's *Descent of Man,* which failed to distinguish between body and soul, had an unsettling effect on the morals of weak and less intellectual minds. Mivart's theory of the simian origin of the human body was overconfidently advocated by Catholics much impressed by the rapid advance of Darwinism. Newspapers added sensational touches which produced intense popular excitement, leading to a philosophy of naturalism. Lovers of pleasure, an excess of mind to which frail man is prone, freed themselves from the checks of the moral law. Darwin, himself, reared a devout Anglican, adopted in late life the attitude of a tolerant unaggressive agnostic; to quote his own words: "Disbelief crept over me at a very slow rate, but was at last complete."

While we recognize the intrinsic possibility of evolutionism, and need have no fear to accept the demonstrated conclusions of science in its favor, we leave, as MESSENGER does, the opportuneness of open advocacy of the theory to the judgment of the Church, the competent guardian of faith and morals.

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Archives de Philosophie. Vol. VIII, Cahier III: *La Philosophie de M. Meyerson.* By M. GILLET. Paris: Beauchesne, 1931. Pp. 114.
The Logic of Science. By HAROLD R. SMART. New York: Appleton, 1931. Pp. 234.
God and the Universe. A Symposium edited by J. LEWIS MAY. New York: Lincoln MacVeagh, The Dial Press, 1931. Pp. 209.

The volumes appearing under these titles may be grouped as studies in the conditions and methods of knowing. Two of them inquire how we know in science and what the way of knowing in science tells us about the nature of mind. The third is a restatement of what present knowledge and theory in science have to do with the validity of knowing in religion.

The work of M. GILLET is closely written. It is a statement of the place of Meyerson, of his originality, his main theses and his manner of proving them, and what GILLET thinks his limitations. Émile Meyerson is the best known of contemporary French epistemologists, and is "new" and profound. It would be hard indeed to deny or doubt his competence in the philosophy of science; and no wonder; he worked for many years in the laboratory itself, and is extraordinarily learned in the whole history of philosophy and the sciences. He is at home, e. g., in the *Physics* of Aristotle, in the thought of the Middle Ages and of Descartes and Hegel, and in modern relativity. "Science" seen thus broadly is the content of his own work, and is regarded as a usable and fair specimen of human thought and its development. What we may term the physical result is, in addition to brief articles and studies, three large works cram-full of facts and ideas: *Identité et Réalité* (2nd edition, 1912), *De l'explication dans les sciences* (2 vol., 1921), and *La Déduction relativiste* (1925).

The human and philosophic result is what M. GILLET wishes mainly to state. Meyerson himself takes his critical studies in the philosophy

of science as a prolegomenon to every future metaphysics, as a preliminary study of the possibility and conditions of metaphysics, and, more strictly, as an inquiry into the nature and demands of the human mind. His aim is to know the nature of reason, in his own words "dégager les principes essentiels de la pensée." What he studies for this purpose is the mind at work, or "reason," i. e., thought in its broadest extension, as seen in science, philosophy, and common sense. The scientist who, like the man of common sense, uses his mind without trying to observe its working and who in general is indifferent to the problems of knowledge, is an excellent subject for study. Meyerson finds it proper to draw a line between the *raisonnables* manifestations of reason, which are squared though not strictly and perfectly squared with reality, and *rationnelle* explanations which answer altogether to the demands of reason and belong to the deepest claims of mind, those which it cannot renounce, because they form its nature.

As an issue, the master idea in Meyerson is that of the unity of human reason. He says: "The scientist reasons exactly as the philosopher does, and the latter as the man of common sense." Human thought takes many forms, but fundamentally it uses just one contrivance, which is the explanation of the many by reducing it to identity. He sums up his conclusion repeatedly in the phrase, the "schema d'identification." This comprises three theses: (a) the mind in its vital dynamism is borne irresistibly to seek unity by the identification of the many abstractions from time or change, (b) at every step it demands an ontological absolute, (*c*) it also encounters the *irrationnels*, i. e., obstacles which in fact and in right are insurmountable. These three may be put in three words: cause, substance, the unintelligible. The first of the theses is central and most important. It expresses the formal character of all intellectual activity, or that which necessarily exists in every thought and without which it would not be thought: in presence of the irreducible given of sensation, the mind experiences a genuine uneasiness: it has the many and changing, it demands the one and permanent. And it cannot give up its demands, without destroying itself. To think and comprehend anything is to see it as one and permanent, to submit it to the principle of identity: *identifier*—this is the sum of all mental effort. And how is this done? First, by sacrificing all that is heterogeneous and singular in the real, in order to keep only the homogeneous and universal. Then, and more important, by abstracting from all that changes, in order to keep only what is unchangeable or *supra tempus*. Divers events, of things suc-

ceeding each other in time, can be identified or united only on the basis of the principle of cause. Yet the human mind, if it is to remain mind, demands that they be identified. Thus mind of its nature demands cause. It is all the same whether mind is expressing itself in science or philosophy or common sense—it seeks cause in every instance.

This conclusion of Meyerson is counter to the view of the new and old positivists headed by Comte, who said that science is a system of relations among phenomena, it is the sum of utility-laws based on faith in the uniformity of nature. Even today, as GILLET notes, most scientists seem to accept this opinion. Meyerson grants that scientists see the universe as law-abiding and that they do not perfectly know the laws of nature. All the same, it is a refrain with him that science seeks causes and is not limited, cannot be limited, to the observing of phenomena. The first aim of science is to discover the laws which rule events, but its second is to explain the real by seeking its *rationnelle* cause. That is the case with the science of the Peripatetics, of the mediaevals and of the moderns; the search is not merely an historic datum but a human necessity. No matter how positivistic a scientist be in theory, he succumbs in fact to this procedure. An arrow hits a target. The scientist wants to know more than the succession of phenomena, and experienced bond between arrow and movement and hit-target. He tries to find the necessary bond, the reason which makes the non-succession of these phenomena contradictory. GILLET sums up the point: "The schema of identification applied invariably by scientists of all ages cannot be a basic character (*assise*) of human reason." The same necessity is observed also in the philosopher and the man of common sense. Hence the known oneness of human reason, and the practical conclusion that science and philosophy, far from allowing the hiatus wished by Kant, should unite their efforts to penetrate the real.

GILLET'S main objections to this philosophy concern the efficacy of non-human final causes, which though not denied is not avowed by Meyerson, and the latter's seeming to rate man as radically one with brute. Meyerson, however, in reading the manuscript of GILLET'S study, said his stand on these problems is not essential to his position.

HAROLD R. SMART makes his way very well over a difficult piece of ground. He is careful at every step and knows what he is doing. The reader keeps turning back in thought to the early statement to the effect that Professor SMART'S training was in mathematics and physics, as his work in these sciences is plainly more competent and

more fully thought out, and, what is very convincing, is, like Meyerson's studies to which SMART owes much, connected with the details of the history of the matter in hand. We may review his work under the headings of his main assumptions, his points or what he regards as his findings and conclusions, and his troubles.

Among the assumptions are these. That the faculty psychology is "now in disrepute" and "outworn." That the causal theory of perception is "ridiculous," yet that "our experience of sense qualities, in perception, serves as the basis of all scientific endeavor." That the physical world taken by itself is a fragment and incomplete. That he has distinguished genuine science from pseudo science. That science, though predicting to advance knowledge may not aim at the practical control of things or events—which aim would be astrological and "wholly alien" to the spirit of scientific impartiality; yet that science has aims, and that divergent results spring from "differences of attitude on the part of scientists." That "the function of science is to reveal the structure and processes of 'nature'." That how minds can know the nature of objects external to them is a "meaningless" problem. That natural science "rightly" assumes the independent existence of its objects, that for such science "the existential is the real." That "of course, all genuine relationships are logical."

The main success and effectiveness of Professor SMART'S exacting study lies in his treatment of the logic of mathematics and the conditions or presuppositions of physical science. He takes issue (chapters 3 and 4) with the "uncritically accepted doctrine" of the authors of *Principia Mathematica* and many other authors that mathematics is a purely mental product and the way of mathematical science merely a hypothetico-deductive one. Such doctrine is "glib and ready," but for the following reasons is incorrect. We have (a) given historical fact that number is primitively hitched to things, beginning with a dual and at last achieving a plural; among civilized men it seems, but only seems, a mere object of thought. We have (b) the fact that the mathematical concepts, even at their fullest development, fit physical science and are used in physical science, which *ex hypothesi* is tethered to outer nature, and (c) the fact that physical science often sets problems which occasion "further developments in pure mathematics." So "we know now, as logicians and philosophers, what to think of the doctrine that pure mathematics is a completely *a priori* science, constructed by pure thought, functioning apart from all experience": it is at best "highly questionable" that mathematics is the product

of thought creating or discovering its objects in a vacuum. Increase in comprehensiveness, which is the mark of advance in every science, does not mean loss of touch with the real outer world. SMART'S own counter doctrine, which is not new or unheard of, may only be mentioned here. It is that mathematics is the science of quantity with "a very well-defined content, namely the quantitative features of the actual world of perceptual experience"; it is "engaged in progressively specifying" the quantitative aspects of things, "construed by means of a legitimate abstraction, as independent of all other more concrete aspects and even of the actual things themselves."

The physical scientist must simply accept his world with natural piety, accept it as a datum, as "just a contingent somewhat." His science is inevitably in the realms of permanence and change, and therefore must of its nature (as Meyerson says) use the categories of substance and cause. These ideas, must be employed, though we cannot physically find either substance or cause.

> In the light of our historical outline it becomes very clear that substance and causality are no longer to be sought for amongst perceptual realities, as two among many things and processes to be found there; they cannot be seen, heard, or touched—it were worse than useless to seek after the manner of Hume, for the "impression" to which the "idea" of causality corresponds. Rather, we have to do with "categories," forms of relationship, completely permeating the world of existential entities as apprehended by the physical sciences.

What Professor SMART takes as his own chief inquiry is the nature of mind. Logic teaches us no new facts, but puts the facts we already know into a new light, and in this new light they reveal the nature of mind, whereas they "originally taught us something about the nature of the external world." Say for instance that mathematics studies objects from the quantitative point of view: you are "also saying that quantity is one of the categories of knowledge, one of the ways in which the mind finds a satisfaction of its natural desire to know." Quantity is thus a form of scientific intelligibility and also of the mind which knows. Scientific knowledge tells us about nature and about mind.

As Professor SMART has not the competence or confidence in the biological, psychological and social sciences that he shows in those reviewed, and as he only begins or suggests an outline of how their logic might best be handled, we pass over his treatment of them.

We mention now, not with any acerbity, some of the little troubles

that keep turning up on the reader, and we would guess on the author, of this interesting inquiry. Cause is one of these bothersome problems. Grant that science has to do with causes in the sense of explanations and not mere descriptions. Still, what is the nature of causality? We read: "cause is the set of conditions, past and present, most intimately involved in the coming to be of the result." Again, and we think better: causality is "the determination of phenomena in terms of their dependence on, and orderly relation to, other phenomena, external to themselves." And since in Professor SMART'S view these phenomena are real, one wonders whether the causal orderly bond between them is not also real, though it was said that all relations are logical; and this question is more pesky when the author lays down the formula that "the more relatedness there is discovered the more objectivity there is realized." One is allowed to seek also whether causality has meaning only with reference to the "unaccountably given," and applies only "to that obviously abstract fragment of experience, the universe *qua* physical." And one is left asking whether the common and fruitful assumption of science that there are causes is, in a work in which 'cause' is cardinal, the only ground that could be adduced for the validity of the causal principle.

On the epistemological problem, the reviewer shares Professor SMART'S impatience. But impatience merely succeeds in piling up questions. The problem begins in single quotes, to show its illegitimate character, and it is meaningless to inquire how minds can know objects external to them. In this same problem, however, we have in time a "real point at issue," and a little later "a real solution of the problem" is given. The solution hinges on minding "the true distinction" between the subjective and objective aspects of experience, and the reader's question is put down by the author's refusing to make the false assumption that physical objects and minds are two "separate and disparate sets of 'things', which manifestly cannot be, yet somehow must be, related."

Human purposes or meanings occur of course in a setting of mind and ideas. But one is bothered again when Professor SMART seems to suppose a sub-human vital purpose which is the purpose of no mind. At least, one is allowed to wonder how an author can possibly put this gap between purpose and purpose, and leap nimbly from a mind-purpose which we know to a no-mind purpose which we do not know and which (we submit) we cannot intelligibly conjecture. The problem of interpreting order was shunted earlier; it returns now in terms of pur-

pose. Dr. SMART allows so much here—that the biological order expresses purpose. Then he makes so strange a halt: the purpose is present all right, but it is meaningless. It is also said to be "indiscriminate." One suggests that this is precisely not the case. Whatever is at work, effecting the order, whether it be chance or purpose or meaningless purpose, is quite discriminating.

With these strictures, which after all may be based on misapprehension, Professor SMART'S study remains a strong piece of work, sincere, largely conceived, far from shallow or full of childish assumption.

God and the Universe is a book bigger in title than in fact. Inside, it is a work concerned with the relation of our present knowing and theorizing in science, said to be the science of Einstein and Eddington and Jeans, to our knowing in religion. The studies are by three ministers of different Christian groups. The contribution by S. S. Carpenter, chaplain to the King, is unfortunate. It consists of a series of unwise smiles and handshakes, a hundred pages of chatterish talk showing less than a total ignorance of the subject, and a sprinkling of wise cracks. The others are exceedingly intelligent, written clearly and very much to the point.

M. C. D'Arcy, a Jesuit, is calm and effective in his procedure. He notes that his own people are almost too sure of themselves, thinking modern science and philosophy unimportant. "This is a mistake." He admits the fact that many scientists and philosophers say that Christianity has had its day and that people accordingly see religion as in a losing battle against scientific criticism. The same sort of opposition, he says, has been a feature of the past, and it is not his own religion that has had to give way. He is also positive. Take a chief source and fund of objection to religion, the evolutionary theory. The one effective and sure feature of the theory is the idea of progressive development, and this is "inseparably bound up with" Christian life. He asks leave, and says good thinking is forced to make two reserves with regard to evolution: that a background of permanence be allowed, if evolution is to be intelligible and possible, and that mind be not thought to come from matter.

> . . . a being which can reflect upon its own acts and activities, raise itself by its own determination to an ideal which is wholly immaterial, discover the real essences of things and direct itself by standards which are absolute to an end which is its own perfection, must belong to a very different order.

He is not at all convinced that the newly gotten sense of the physical tininess of our earth and ourselves renders us unimportant. The heavens with their countless stars yet undiscovered are "just lumps of matter, important because they are intelligible and bear on the life and ideals of man. The idea is worth them all, for an idea can contain the universe . . . and it is our very inability to think away mind that makes us terrified before vast and long corridors of time."

This Jesuit's way of knowing God is scarcely mentioned. But it is evidently other than the way of Dr. Bertram Lee Woolf. This general question of how one knows God, or of whether one knows God, was too large an issue for the few pages given to these writers. Dr. Woolf affirms that science has its limitations in our bona fide knowledge. For instance, man knows beauty, the delights of friendship, the joy of home, which are "real things essential to fulness of life, but science passes them over. Science is a net, and a net is characterized quite as much by the holes as by the cord that makes them." Science does not affirm that there is or is not a God. But with regard to whatever God there may be, science may and does make certain requirements: God must be conceived in terms of mind and not of space-time or matter, for human mind itself transcends space-time and matter; God must be careful "to the utmost limits," since matter in the molecular realm is so delicately manipulated; again, whatever God there may be must be intelligent, as various bits of our known world "all work themselves, with a nicety that we cannot even imitate."

The essays of Father D'Arcy and Dr. Woolf form a moderate and restrained statement. It amounts to this: What we know by way of science helps toward detailing and refining our knowledge of God; in any case it is not, in its existence and rational explanation, a maiming or nullifying of that knowledge.

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Why We Oppose the Occult. By EMILIE CAILLIET. (Trans. by G. F. Cole). University of Pennsylvania Press, 1931. Pp. 200.

This work deals with the occult, or the phenomena of magic, sorcery, witchcraft and spiritism, and it defends the thesis that "there has never been a distinct age of magic, but that man has always believed in and feared the supernatural." The development of materials is histori-

cal, though the volume is in no sense a history of occult practises. Only such occult phenomena are selected as are relevant to the main thesis. Contrary to a certain French Sociological School, which holds that in the life of man religion comes first, and that magic is a revolt against religion which prepares the way for science, M. CAILLIET maintains that "magic and religion were confounded in ancient India and in ancient Egypt; in part they are still confounded among the peasants of contemporary Europe. The most diverse creeds have succeeded each other; belief in magic is found at the base of them all, universal, permanent." (p. 4) Magic, he finds, consists in the belief in an occult power emanating from inanimate objects or animals or human beings which, through the power of the magicians, can be controlled and transmitted from one being to another, and though it may be used for good ends, it is more often made the means of evil purposes. It has had a degrading influence upon primitive peoples, and that to such an extent as to arrest the development of intelligence and bring about moral and spiritual disintegration. This fact, he says, would seem to indicate that "primitives" are really examples of a decadent race, and not at all groups that by evolutionary forces have been raised one step above the level of brute animals—a view vigorously endorsed by Allier when he said that he felt "less and less disposed to accept a sociological romance founded only upon observations classed and organized upon a preconceived plan." (p. 19)

In criticism of the view that religion either has its roots in magic or ever has been identical with it, the observations of the Abbé de Broglie deserve citation: "Are religion and magic identical? God forbid. If that were true, if the idea of divinity was confounded with that of evil powers before whom mankind trembled with fear, religion should have been extirpated from the face of the earth as a public danger. In vain did Lucretius attempt to establish this misleading similarity and to denounce religion in general as the cause of humanity's ills. Religion is beneficent; it is necessary, as even most modern rationalists agree." (*Religion et Critique,* Paris) That man has always believed in and feared the supernatural, given his essential religiosity, amounts to little more than an emphasis on the obvious, though this does not in any way detract from the value of the studies, such as the present one, of the nature and extent of those abnormal and superstitious fears of the occult which have done and still do so much harm to illiterate and untutored peoples. In this respect M. CAILLIET has done well, especially in his treatment of sorcery. His references to revealed religion

are always respectful, and, on the whole, accurate enough. One notes, however (p. 44), an attempt to rationalize the miracle of Joshua, to suggest a superstitious element in the Catholic's use of rosaries, chaplets and medals (p. 119), and to accuse certain Popes of dabbling in witchcraft merely on the ground that they were accused of it in certain books of doubtful historical integrity. (p. 134)

Though he warns the reader of the dangers inherent in the practises of magic and sorcery, he seems to us not to have distinguished clearly enough between supernatural and praeternatural phenomena and the merely metaphysical, a neglect which tends to give the impression to unwary readers that the dangers incident to the one will also be found in the others, i. e., while rightly avoiding any dabbling in magic or sorcery, or spiritism, they will also look skeptically upon the supernatural. These defects, however, are of a minor order, and the book may justly be classed as a valuable contribution to the literature of ethnology and anthropology.

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The Devil in Legend and Literature. By MAXIMILIAN RUDWIN. Chicago: Open Court, 1931. Pp. 345.

When one has said, as he may truly say, that this is an interesting book, he has paid it about the only compliment it deserves. The element of interest arises both from the singular character of the subject and from the many curious and bizarre conceptions of it which the author, by dint of wide reading, has been able to assemble. They partake of the mysterious, the occult and the extraordinary; hence generate a lively interest by their natural appeal to the imagination.

At the outset the religious minded reader is made skeptical of the value of the work as history, first, by the purely rationalistic attitude taken by the author. Referring to historians of religion who deny that the devil of the New Testament is identical with the evil spirits of pagan religions, he says: "These students of religion fail to see that no discontinuity exists in the evolution of human beliefs and institutions." (p. 1) This statement obviously rules out of court any thought of Divine Revelation, and places the Scriptural accounts of the Evil One on a par with popular legends and the irresponsible references of the writers of fiction. Again, one cannot, unless he be already skeptical of the real existence of the devil, avoid offense at the flippant manner

in which he is spoken of. He is, e. g., described as a "sort of prosecuting attorney attached to the judgment seat of the Eternal." (Ib.) And again: "Satan seems to squirm, however, when he is subjected to the relentless analysis of scientific inquiry, without the element either of fear or sentimental subjectivism." (Preface, p. x)

But these objections aside, the work is described on the jacket as "historical rather than philosophical, while scientific impartiality is maintained throughout." A perusal of its pages, however, reveals rather violent religious, anti-Christian, and especially anti-Catholic prejudice, or, at least, abysmal ignorance of Catholic doctrine, and a philosophy of religion which ignores as puerile the element of supernatural revelation. As for "scientific impartiality"—well, it has indeed been said that science is impartial, without prejudice or *parti pris*. In other words science is not for this, that or the other school or opinion, but simply *is*. In historical matters this would involve a presentation of the facts drawn from trustworthy sources, facts sifted and classified to be sure, but presented to the reader without such running commentary as to predispose his mind to any given interpretation. In that sense, this volume cannot be said to be scientifically impartial. No attempt is made to distinguish genuinely historical sources from those that belong to other departments of literature. For example (p. 8), under the chapter heading of "The Legend of Lucifer," one finds quoted or referred to the *Talmud*, Ginsberg's *The Legend of the Jews*, the *Koran*, St. Irenaeus, the German mystic Jacob Boehm, Anatole France's *le Puits de Sainte Claire*, and Heywood's comedy, *The Play Called the Four P. P.* This method is followed throughout the book, and it conveys the impression that the devil is a purely mythical personage, and that consequently references to him by whomsoever made are of equal value, i. e., of no objective value at all.

The Church is depicted as at one period looking upon the practises of witchcraft as "sheer phantasms", and then later of putting her "full faith in these superstitions" (p. 162), and peresecuting all who participated in them. "But more than anything else, it was art that Catholicism counted among the works of satan. The church at all times affirmed the diabolical origin of artistic beauty." (p. 252) A statement of this kind in a volume that pretends to be either historical or scientifically impartial is a luminous commentary on the mind of its author and on the trustworthiness of the references to anything Catholic. If one cares to read a rich collection of things said about the devil, his names, his number, his proper dominion and his supposed

activities in the world of men, let him read this book, but let him read it as he would a treatise on *popular* science (or, in large part, a fairy tale) for entertainment only. To seek in its pages either philosophical or scientific accuracy concerning the nature of the Evil One, or worse still, to seek theological enlightenment would lead to little else than error and confusion.

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The Faith of a Moralist. By A. E. TAYLOR. New York: The Macmillan Company, 1930. 2 Vols. Pp. xx + 437; xxii + 437.

These volumes contain the Gifford Lectures given in the University of St. Andrews over a period of two years. Each comprises nine lengthy chapters spanning an immense range of subjects of decidedly unequal importance. At times, the author states basic truth in forceful and happy language that begs for quotation. Again, he is cautious, hesitant and painfully unsatisfying. Moreover, his manner of argumentation varies. Occasionally he states his case in crisp, logical terms; this is particularly true in questions where he draws upon Aristotelian or Thomistic philosophy for his solutions. But only too frequently does he deem that "the thought of great makers of literature who have been also great readers of the human heart may be much more important that the speculations of the professed metaphysician." (p. 16) In this he follows a definite school of English ethical writers, exemplified by W. H. Mallock, who are prone to quote Shakespeare in support of their assertions. This tendency, reminiscent of a style made famous by Chateaubriand in his *Genie du Christianisme* and the "unstudied, even occasionally conversational" manner of presentation enervate many discussions. The first and easily the better of the two volumes has a chapter (II) on the supposed lack of connection between actuality and value that is well worth reading. Such a view involves an unconscious false abstraction. We attribute value not to abstract virtue, art, science or health but to actual virtuous conduct, real art, science and health. The *concept* "virtue" has *no* specific ethical value. (p. 38) No one could seriously maintain that there would be intelligent meaning in the statement that health is a value, if there were no actual living organisms. What really has value is always the activity of a real individual. In a sense, what we pronounce to have value is a universal, but it is an "embodied" universal, *in rebus,* not *post res.* The view

that "ideals" have value but not existence is a consequence of an extreme logical "nominalism" which requires to be corrected by the Aristotelian doctrine of "analogous predication." (pp. 48-55; 102-103)

In insisting that a satisfactory final goal for man must transcend the temporal, the author declares that "all human creation is an attempt to experience the fruition of good in a *now* where there is no consciousness of the no longer, or not yet." Hence, T. H. Green's thesis (p. 71) that the moral best *always* lies ahead is inacceptable. "A good which gives life all its value cannot simply be a goal which lies ahead of us at every step of our path and in fact recedes indefinitely as we approach it. It must be something which is actually being had in fruition through a present which does not become past." (p. 99) Meliorism is only a foolish *alias* for pessimism. (p. 100) If there be an ultimate plurality of goods then unity of character is unattainable. (p. 102) The Christian heaven is not a place of dull, stagnation but a state of unimpeded activity. (pp. 108-111).

The general question asked in the first volume is whether or not morality involves any presuppositions which point beyond itself. The author concludes that it does involve three great "supernatural" implications, God, grace and eternal life. But he is vague as to the meaning of "involve." Usually he seems to mean that without God, morality is vain. But there are occasions when he appears to admit the sophism that morality proves the existence of God, as when he says, "The reality of the pilgrimage involves the reality of the goal." (pp. xii-xiii) He might also have been well advised to have adopted the strict Scholastic meaning of "supernatural." He might then have seen that the "natural theologian" would demand some divine aid for man in his moral struggles but not grace, would assign to man as his final end a happiness consisting in knowledge and love of God, but not eternal life as the Christian now understands it. Grace and the beatific vision belong to the realm of theology, not theodicy.

The last chapter in volume one returns to the question of the goal of the moral life. It refutes Bradley's theory that "morality is fighting against evil." This might be true in an evolutionary system like Spencer's. But Spencer confounds obligation itself with the awareness of it, and this with consciousness of disagreeable effort. To identify morality simply with the struggle against evil is like identifying art with the acquisition of technique. There is nothing irrational in anticipating a state in which the process of forming character is over, while the activity issuing from character remains.

The second volume wrestles with the problem of natural theology and the positive religions. Most of the arguments relative to the possibility and the plausibility of revelation are to be found in any textbook of fundamental dogmatic theology. Our author has likely borrowed copiously from this source. This applies also to the chapter on the supernatural and the miraculous. Here (pp. 179, 182) St. Thomas is quoted advantageously, but strangely enough St. Thomas' insistence upon the strictly divine character of the miracle is not understood. Professor Taylor naïvely thinks "it might be quite reasonable to say that events rightly called miracles by one age might be rightly regarded as non-miraculous in another age which has grasped more of the general pattern of natural process." (p. 183).

Many pages are wasted in a hopeless attempt to vindicate real authority for religious bodies which dare not claim infallibility. There is no parity with conscience which though fallible imposses a strict obligation. The authority of an erroneous conscience is real because man can turn to no more final guide. Certainly, a fallible external religious organization is not an ultimate norm of conduct; the only weight its pronouncements can carry is that of a group of experts in religious questions.

Frequently the pragmatic test is applied to elements in religion. Thus the value of prayer is proven from the experience of "fruits" rather than by recourse to dialectic. (p. 83) In general, "a religion is true just in so far as it achieves the purpose—of thoroughly remoulding the self, so as to make God—the very center of a man's thought and will." (p. 81) The busy reader may safely omit chapters six and seven. The former presents a true but familiar reconciliation of ritualism and inner religious feeling. The latter is equally trite in portraying the *convenientia* of the sacraments as material channels of spiritual gifts.

Professor Taylor has written a work of first-rate importance. His personal views on questions of vital importance are often profound and well expressed. Even those sections which appear commonplace to readers acquainted with Catholic theology will be new and impressive to the generality of purchasers. He has rendered both them and us a valiant service in restating our views in the light of their difficulties.

John F. Finnegan.

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The Flight from Reason. By ARNOLD LUNN. New York: The Dial Press. 1931. Pp. 328.

The theme of this book is "that flight from reason which was precipitated by the irrational philosophy prevalent in Victorian scientific circles." Mr. LUNN develops his thought "against the background of an age which believed in reason as the ultimate criterion of all human knowledge", that is, the period of the greater Scholastics. The first chapter accordingly sets forth the grounds for their respect for reason, their manner of harmonizing it with faith and, in brief, what remarkable results in terms of orderly development of verifiable knowledge, of consistency, of sound moral theory and of joyful optimism they obtained by their method. And if here and there, as on page 38, where he says the mediaeval theologian assumes that "reason unchecked by experiment was capable of solving all problems in the heavens above and on earth beneath", he exaggerates a bit, one can forgive his overstatement. For in the chapters which follow he shows us magnificently by way of contrast how, with the dawn of empiricism and its development under the Protestant influence, regard for reason was more and more pushed into the background until reality came to be reduced to matter and motion, and all qualitative differences in things disappeared. It is this which he calls "the Victorian Heresy", because, having been given the status of a "scientific" dogma by the Victorian philosophers, it later came to be regarded as a sort of religion of science, which was directly antithetical to the main truths of revealed religion—a personal God, immortality of the soul, freedom of the will. The early evolutionists, especially Darwin, Darwinism, the naturalists, the "rationalists" and the spiritists—all have their claims fairly recorded and, in brief but brilliant fashion, all have these same claims submitted to the vigorous, often devastating, but always kindly criticism of a modern writer who cuts and trims with the sharp steel of a logic developed by the very men whom the Victorians, without knowing them, so heartily despised.

Incidentally one may note that both the quotations from St. Thomas and the application of his healthy intellectualism to this field of thought will go far toward removing, or at least softening, the harsh judgments that some have made of him. Certain critics might object that the author in pointing out the short-comings of the early evolutionists, and in particular of Darwinism and the Darwinian naturalists, is cultivating a soil already well tilled. While in part this is true, no one, we think, has ever approached these questions quite with Mr. LUNN'S viewpoint,

nor revealed their essential fallacies in language more suited to convince the popular mind—a mind in which old errors live and work havoc long after they have been laid to rest in scientific circles. It is this bubble of residual pretense that he, after the manner of Wickham in *The Unrealists*, has effectively pricked and deflated. He has carried the much needed message to the rank and file that what has been parading so long as science is not science at all, but its very antithesis, that what has been advanced as incompatible with religion has been found to be simply incompatible with reason itself. "Aquinas," he says, "began by facing the greatest of all problems—'How does everything start?' The moderns tend more and more to evade the problem, a problem to which there are only two answers—'God' and 'I don't know'. Our modern sceptics are not courageous enough to announce their failure to solve the problem. Accordingly, they take refuge from the pain of thought in the cloudland of metaphor." (p. 38)

It may be too much to expect that our contemporary fleers from reason, and from reality as well, will recognize in Mr. LUNN'S book a faithful portrait of themselves, but it may provide a large reading public with a means of recognizing them. And that will be enough, because it will be much better.

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American Society: Interpretations of Educational and Other Forces. By CHARLES FRANKLIN THWING. New York: The Macmillan Company, 1931. Pp. 271.

This book is made up of selected writings of the President Emeritus of Western Reserve University and Adelbert College. They appeared originally in the *Hibbert Journal* in the years between 1911 and 1930. The experience of turning backward and trying to relive the emotions of the period of the World War and immediately after, as depicted in phrases which at the time they were written thrilled every nerve of our body, we found singularly productive of the self query: Could I have ever felt in the way which, as these words show, everyone at that time did? After all, a man wants to forget, and does easily forget, the times when his emotions ran away with his reason. We find it impossible to evoke the enthusiasm of those days and live them again; memory refuses to give the thrill which came once upon a time; despite the lofty tone which appears in Dr. THWING'S burning words, the occasion is gone, and the scenes will not move as once they really did.

Dr. THWING, however, has given us something more than recollections of the War. The first essay, "The Best and Worst in American Society", is a scholarly study of features of our national life which should arrest the attention of thinking persons. The worst, he says, relates to things, and the best, to persons. There is hope in this; for things can be ruined beyond redemption; persons always can be saved. Then there are the thoughtful and the thoughtless; and if the thoughtless are the worst, then there is work for the thoughtful to do. His recommendation to Protestant Churches to adopt the teachings of Leo XIII on marriage is one which they would do well to follow. We wonder if Dr. THWING has changed his estimate of the American family since 1911, when this paper was written? Education, he well says, without religion, becomes 'narrow, . . . radical . . . materialistic'. The Pilgrims of the Plymouth settlement and their neighbors at Massachusetts Bay were motivated by religion; the chief educational force came from the Bay Colony. Dr. THWING is unwilling to concede the correctness of the ordinary view of the materialistic tendencies in America; in the chapter on the tests of civilization, he finds a great deal of idealism extant among us. Here too he applies the test of religion, as the last of a series of twelve; in regard to religion, America does not measure up to the civilized standard; but he believes that it will yet return to its earlier and better self, in accepting religion pure and undefiled.

Especially in these later essays do we find the well rounded views not only of a mature mind, but of a mind seasoned by experience and mellowed by a philosophy which has grown with the years. It rises above the ephemeral, and, as it were, from the vantage point of one outside the system of our maddening rush, sees our faults and our virtues, our weakness and our strength. Yet in some manner, there is woven into these abstract comments the figure of a benign personality, whose judgments, sometimes severe, are always expressed with gentleness, and who, into the shadows which form a necessary part of the scene he pictures, always admits a ray of hope.

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Moral Values and the Moral Life. The system of St. Thomas Aquinas. By ETIENNE GILSON. (Translated by Leo Richard Ward). St. Louis: B. Herder Book Co., 1931. Pp. 337.

Father Ward has done well in giving to English readers a com-

mendable translation of GILSON'S outline of the moral system of St. Thomas. Appearing in the group of studies called *The Christian Ethicists,* it adheres strictly to the policy of getting students away from textbooks and secondary sources to the originals themselves. The author is to be congratulated upon his choice and arrangement of the numerous passages from the *Summa,* the *Contra Gentes,* the commentary on the *Sentences* of Peter Lombard, the group of *Questiones Quodlibetales* and *Disputatae,* and (for explaining the Thomistic views on government) a collection of the *Opuscula.* In an introduction teeming with sound ideas, we are told that "the first condition for grasping the ethics of Saint Thomas is to know that in this system there is no detached ethics; no one can define the spirit that rules over the elaboration of this ethics without defining the spirit of the whole of Thomism." His teaching on the Supreme Value which opens the book is the key to his entire ethics and makes clear how this hinges on metaphysics. The ethics of Thomas is quite intellectualistic; it is an ethics of law and order, because the problem of the autonomy of man is solved by his freely entering into the universal divine scheme. It is an ethics in which right is more fundamental than either obligation or sanction. The audacious blending of Aristotelian and Christian thought while running counter to certain phases of Augustinianism could withal look for support from an equally ancient Christian tradition to be found in the Greek and Latin Fathers from the second to the fourth century. The body of the book is composed for the most part of rather simple passages translated, with some transpositions, directly from the Latin. The author does not intend to give an exhaustive treatment such as we already possess in the essay of A. D. Sertillanges. A comparison of the two works shows a personal touch even in parallel material, indicative of independent and first-hand acquaintance with the original author. Indeed, the simple commentary upon the passages cited reveals the scrupulous restraint of the genuine historian intent upon giving us the views of his author alone without any coloring from the mind of the commentator familiar with the subsequent development of moral theories.

Two-thirds of the volume deals with the familiar questions of fundamental morals. They are treated briefly and with apparent simplicity. It is impossible, however, to simplify here, in the sense of making easy to grasp. Hence, the average student untrained in Thomistic philosophy, will likely find these pages extraordinarily vague, unless he reads them under expert guidance. The second part bears the title:

Moral Life in Practice. In the chapter on Justice (pp. 246-276) such practical questions as rash judgment, suicide, the right of private property, the duties of judges, plaintiffs, defendants, witnesses and lawyers in court are momentarily discussed. The final chapter on the aim of group-living speaks of the purpose of the existence of the State, and gives St. Thomas' reasons for preferring a modified monarchy. A few brief but trustworthy bibliographical notes and a good index further increase this book's usefulness.

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The Mind in Action; A Study of Motives and Values. By GARNETT A. CAMPBELL. New York: D. Appleton and Company; Cambridge: The University Press, 1932. Pp. xii + 226.

In this very interesting book Dr. GARNETT gives his views on motivation, its nature and causes. In his discussion of appetites and instincts — terms which he defines very precisely — he follows in general the Gestalt psychology.

He rejects the behavioristic theory of instincts as altogether inadequate and insists on an element of cognition in all instinctive action. He defines instinctive behavior as "the pursuit, with more or less foresight, of an innately determined end in response to the cognition of a meaningful situation." (p. 22) Instincts to Dr. GARNETT are broad conative tendencies made up of groups of impulses to purposive activity, distinctly psychological; not merely concatenated reflexes; arising in the cognition of one type of meaningful situation and normally ceasing when the end-situation has been reached. Thus the definite feature of all instincts is the end-situation and this the author uses as the criterion for distinguishing the instincts from one another and from other activities. Using this criterion the author lists sixteen human instinctive tendencies. Three of these, nutrition, sex and sleep, are names applied to appetites as well as to instincts. His analysis of these as appetites and as instincts is interesting. Among the other thirteen which are not directly associated with any appetite but in the author's mind are instincts pure and simple we find 'appeal.' In this case his argument is unconvincing. That 'crying' in children is an instinctive and not an appetitive activity—using the author's distinction between these two—is not clear.

In his discussion of the relation between emotion and motivation the

author rejects the theories of Shand and McDougall as "not entirely consistent with the facts." He holds that feeling is not a primary source of motivation but simply one form of motivation itself. He gives a prominent place to potential pleasure — pain as a guide to activity, but does not fall into psychological hedonism.

The author's analysis of love and its various manifestations is unusually interesting. The development of the idea of self is accompanied by a tendency to identify other things with the self, to make them form an integral part of this self, so that the person reacts to changes in these things just as though the changes had occurred or threatened his person. Things thus identified with self are loved. This identification of various things with the self is not always to be attributed to parental instinct but may be brought about by other factors. Here the author disagrees with some modern writers. The reviewer agrees that to limit the term 'love' to sentiments based upon parent instinct and suffused with tender emotion is false psychology.

The author's views on beauty and its value are well presented and conform in most respects to the views of other writers.

Although one does not agree with many of the author's ideas on religion and the way in which religious beliefs motivate human activity, nevertheless one finds much food for thought in the analysis of activities as motivated by religion. Dr. GARNETT holds that man *must* have a religion but this need be only something "by which he is persuaded that his life is oriented aright to reality."

The book will prove very interesting and useful to students who have sufficient psychological background to enable them to evaluate properly the author's views.

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CURRENT PHILOSOPHICAL REVIEWS AND BOOK NOTES

The Journal of Philosophy—Vol. XXIX, No. 5: March 3, 1932.

Donald Cary Williams: Report of the Eighth Annual Meeting of the Pacific Division of the American Philosophical Association. A summary of the annual meeting of the Pacific Division of the American Philosophical Association held at Stanford University on December 28 and 29, 1931. The bulk of the papers read dealt with epistemology. **Edward B. Ginsberg:** On the Logical Positivism of the Viennese Circle. A brief discussion of some minor additional aspects of the new positivist movement centering in Vienna and Berlin.

The Journal of Philosophy—Vol. XXIX, No. 6: March 17, 1932.

D. W. Gotshalk: Uniformity and Induction. A discussion of the principle of uniformity in which the authors first criticizes the inadequate theories and then attempts to formulate a statement of the uniformity principle which is adequate. Of all the kinds of induction, he distinguishes two which "involve all the main problems in the relation between uniformity and induction." **A. C. Armstrong:** Fichte's Conception of a League of Nations. An exposition of Fichte's political philosophy.

The Journal of Philosophy—Vol. XXIX, No. 7: March 31, 1932.

Arthur E. Murphy: Mr. Lewis and the A Priori. It is the author's purpose "to criticise and . . . to disprove a theory about the nature of knowledge, and of *a priori* knowledge concerning physical reality in particular." **V. F. Lenzen:** The Metaphysics of Space and Time. A brief consideration of (1) the nature of space; (2) the specification of the metrical structure of space; (3) whether there is a confusion in the theory of relativity between the concepts of space and the frame of reference; (4) whether the theory of relativity requires an operational interpretation of physical concepts.

The Philosophical Review—Vol. XLI, 2, Whole No. 242: March, 1932.

G. Watts Cunningham: On the Second Copernican Revolution in Philosophy. Address of the President of the Western Division of the American Philosophical Association, December 30, 1930. Avowedly a call for recruits to the movement in philosophy formerly headed by James and Dewey. It is the author's desire to safeguard the epistemology of the traditionist and revise that of the revolutionist. **A. N. Whitehead:** Objects and Subjects. A challenge to the tacit assumption of Descartes, Locke and Hume that the more fundamental factors of experience always lend themselves for discrimination with peculiar clarity. Structure of experience, prehensions, perceptive functions, mind and nature and other subjects are discussed as part of this challenge. The conclusion is that the universe is dual because, in the fullest sense, it is both transient and eternal. **William Savery:** Chance and Cosmogony. Chance is not a true

cause. The author's theses are four: The world is contingent, undetermined by necessity; the probability is that it is undetermined by efficient causes, entirely at the beginning, and partially after the beginning; the world as a whole is undetermined by final causes—in this sense, also, it is chance; the method that we must use to explore the world is the method of probability, which is itself a doctrine of chances.

Philosophy—Vol. VII, No. 26: April, 1932.

W. R. Inge: The New Goetterdaemmerung. It is the Dean's opinion that the *philosophia perennis*, even in the Scholastic form which is now so unpopular, is far more satisfactory than the new realisms and new idealisms which have formed a sort of coalition against it. There is no contradiction between the older theory of reality and new scientific theories and discoveries. **Sir Oliver Lodge:** The Physical Aspect of the Universe. An alternative scheme to that of Sir James Jeans, the article is a plea to preserve both the ether and an open mind in present-day science. **J. Alexander Gunn:** Renouvier: The Man and His Work (II). Renouvier's epistemology recalls the empiricism of Hume and the criticism of Kant, but is not merely eclectic. In the philosophy of mind, Renouvier is a notable champion of freedom. All in all, it is claimed, there is much more depth and extent in his work than there is in that of Comte and Bergson. **John Laird:** The Obsequies of Realism. Being one of the smaller corpses left after the general death, Professor Laird argues well for the realistic doctrines on space, time, error and publicity. He ends with an ironic line: I am rather sorry that the naïf realists have died. Had they lived they might have argued to some purpose.

The Personalist—Vol. XIII, No. 1: January, 1932.

Ralph Tyler Flewelling: Wildon Carr—Philosopher and Friend. An account of the life and works of Herbert Wildon Carr, professor of philosophy at the University of Southern California. The story of the development of his "growing mind" from the day he saw Bergson's *Evolution Creatrice* in a Paris bookstore until his death in California. **Herbert Wildon Carr:** Persons and Things. Starting out with the definition of philosophy as "thinking the real, identifying the actuality of the world with its ideality" Professor Carr comes to the following conclusions regarding the reality of the personal world, the world of nature and the world of science: "The universe consists of persons not of things"; "The material world consists of phenomena, appearances", and "The world of science is not a science but an invention." **J. H. Muirhead:** Two Great Philosophical Traditions. A short account of Leibnitz and Hegel, the two greatest idealists of modern thought and the attempts Professor Carr made to reconcile them. **John Wright Buckham:** Herbert Wildon Carr's Contribution to Personalism. Professor Carr's contributions to personalism are summed up under three heads: his emphasis upon the reality and significance of the individual; his explanation of the principle of pure self-activity, and his demonstration of the spiritual nature of reality. The article will be concluded in later issues.

The Personalist—Vol. XIII, No. 2: April, 1932.

B. A. G. Fuller: A Study of Spinoza. An extended review of *Aeternitas: A Spinozistic Study* by H. F. Hallett. Particular consideration is given to the problems of time and extension. **Carroll Dewitt Hildebrand:** Bowne's Doctrine of Freedom. For Bowne's philosophy, his notion of freedom becomes a regulative and fundamental postulate. Freedom does not admit a perfect induction but is a necessary postulate of rational existence, some experience of which is possible for us but the possibility and origin of which lie beyond our comprehension. **John Wright Buckham:** Herbert Wildon Carr's Contribution to Personalism (II). Carr agrees with Leibniz in his monadology but breaks with him on the theory of pre-established harmony. Personality is creative and God is perfect personality but not yet complete. Individuality, freedom and the spiritual nature of reality are Carr's basic doctrines.

The Monist—Vol. XLII, No. 1: January, 1932.

Homer H. Dubs: The Theory of Value. Professor Dubbs states that value is the balance of satisfactions and dissatisfactions of desires. The remainder of the article is a psychological analysis of the elements constituting a desire. **Bruce W. Brotherston:** Moral Inwardness. A plea for the proper appreciation of moral inwardness which the author claims has never received its due in the entire history of the treatment of moral consciousness. **C. J. Ducasse:** Some Questions in Aesthetics. He defends against his critics the thesis that art has no essential connection with beauty. He gives two reasons for this: that beauty may be the result of purely mechanical processes and furthermore that beauty is present wherever the individual's taste finds it and that such cases may be found without the elements of art. **Albert E. Blumberg:** Emile Myerson's Critique of Positivism. The purpose of this article is to show whether Myerson's criticisms of the positivism of Comte and Mach still hold for the newer positivism of Wigginstein and Carnap. **D. W. Gottschalk:** Some Problems of Evolution. Evolution is nothing else but change and the novelty produced by change is not purposive. Evolution is not incompatible with mechanism. Emergent evolution is too narrow and too much at odds with common sense fact to make it a very acceptable speculation as to the detailed nature of the cosmos. **James Wilkinson Miller:** Negative Terms in Traditional Logic: Distribution, Immediate Inference and Syllogism. An essay for the assimilation of negative terms by traditional logic. The author wishes to resolve the contradiction between traditional theories of inversion and distribution, to find a new set of rules which will test the validity of any immediate argument, and to find a wider definition of the syllogism.

International Journal of Ethics—Vol. XLII, No. 3: April, 1932.

Henry W. Wright: Objective Values. The basis of objective value is objective relation—but a relation that is objective in the double sense of (1) existing objectively, and (2) holding between existing objects themselves and not between existing objects and the needs or desires of human

individuals and groups. Such values are considered specifically with regard to the new age. Forms of conduct held to be acclaimed as just by the older morality are said to be worthless in meeting the social requirements of the new mechanized civilization. **C. F. Taeusch:** Business Ethics. Various approaches to the problem of codified business ethics are considered. The student of business ethics must cast off all subjective preferences in his study of the problem. **Gladys Bryson:** The Emergence of the social sciences from moral philosophy. Moral philosophy is the pattern from which all the social sciences have emerged, a fact that the author holds to be not sufficiently emphasized by historians. Aristotle, Grotius, Puffendorf, Adam Smith and various lesser names are mentioned, but no reference is made to mediæval or modern Catholic authorities. **Ralph Barton Perry:** Religion versus Morality According to the Elder Henry James. James was an antinomian, insisted on the divine immanence, and held "the divine-natural humanity", which is both God and man, God as approached from below or man as viewed from above, as his central tenet. Morality is indicted, although not completely or successfully, in the name of religion.

Revue Neo-Scholastique de Philosophie—XXXIIIe Année, Deuxième serie, No. 32: Novembre, 1931.

L. Noel: La Méthode du Réalisme. Further discussion on the critical foundation of realism in its fight against idealism. **Charles Ranwez:** La Théorie du Symbolisme Moral de la Beauté d'après la *Critique du Jugement.* Against those who would place another Kantian antimony in his relation of the beautiful and the moral, the author of this article attempts to show that in the very words relating to this subject in the *Critique of Judgment,* Kant is by no means lacking in logic in his presentation of these ideas, but rather shows an astonishing firmness of doctrine in maintaining throughout his original position. **A. de Ivanka:** La Connaissance Intuitive chez Kant et chez Aristote (Suite et fin). The author concludes his comparison of Kant and Aristotle on the problem of intellectual knowledge. He shows how Kant and Aristotle both come to the same conclusion, the existence of an intuitive intellect but differ in their manner of arriving at this conclusion. For Kant it is only an idea that we must suppose to explain our knowledge, which idea is as subjective as our knowledge, and for Aristotle it is an objective reality since our knowledge is also objective.

Revue Neo-Scholastique de Philosophie—XXXIIIe Année, Deuxième Série, No. 33: Février, 1932.

M. de Wulf: Courants Doctrinaux dans la Philosophie Européenne du XIII^{e} Siècle. Three factors co-operate in the currents of thought of the thirteenth century, the translation of Aristotle, the racial qualities of the new nations and the work of Christianity. The author shows how these turned the minds of philosophers away from the Arab philosophy and the neo-platonism of Proclus. **D. O. Lottin:** La Composition Hylémorphique des Substances Spirituelles (Les débuts de la Controverse). Of the famous

controversy of the thirteenth century the author wishes to investigate the very earliest sources which had so great a part in the evolution of the Franciscan and Dominican Schools of Paris. **Emile de Strycker:** Le Syllogisme chez Platon. The first of a series of articles which will attempt to establish two conclusions: that Plato used the syllogism and that Aristotle discovered its theory. The arguments used in this section are taken from the Byzantine quarrels and the neo-platonic commentators of the Alexandrian School.

Revue Thomiste—T. XV, No. 69: Janvier-Février, 1932.

F. Claverie: La Notion de Synthèse. The second of a series of articles to determine the definition of synthesis, to group its different aspects in the most natural division and mark off the properties of what is synthetic. **Regis Jolivet:** L'Intuition Intellectuelle. Against the assertion that intellectual intuition in man is very limited in the doctrine of St. Thomas, the author points out that St. Thomas recognized in man a vast field for this kind of intellectual knowledge. All attempts to the contrary impoverish the doctrine of St. Thomas and take alarm at an altogether imaginary peril, namely the fear of engendering anti-intellectualism. **M. Benoit Lavaud:** Précurseur de Calvin ou Témoin de l'Augustinisme. (Le Cas de Gotescalc.) A history of the case of Gotescalc and his tenacity of opinion on predestination. The author seems to favor the orthodoxy of this monk and stresses the inequality of the opposing sides in this controversy.

Revue Thomiste—T. XV, No. 70: Mars-Avril, 1932.

L. Ponido: Psychologie Religieuse, Phénoménologie et Théologie. The author makes a plea for the adoption of a psychology of religion as an aid to theology after the manner in which St. Thomas justifies the use of philosophy for theological purposes "ad majorem manifestationem eorum quae in hac scientia traduntur." **A. Gardeil:** La Contemplation Mystique est-elle Intentionelle? (Deuxième Partie.) The author distinguishes three elements in contemplation, an act of faith, the affective element, charity, and the pneumatic element, the inspiration of the Holy Ghost. These are not placed in juxtaposition but organized as a living thing, one completing the other. In the article he responds in the affirmative to his own question, "Are these elements intentional?"

Recherches de Théologie ancienne et médiévale—4e Année, Tome IV: January, 1932.

P. Glorieux: Les Questions Disputatées de S. Thomas et leur suite chronologique. As the title of this article indicates, the author does not mean to discuss the technique, the teachings or the nature of these Disputed Questions, but presents merely the chronological order of their development. He criticizes the order as given by P. Mandonnet and others, presents his own, and concludes that the matter is important for a clearer understanding of the doctrines of the St. Thomas and for a better appreciation of his method of teaching. **E. Hocedez:** La condamnation de Gilles de Rome. Documents at hand to date gave us only a vague notion

as to the motives involved in the condemnation of Gilles de Rome. Recently Monsignor A. Pelzer directed the author's attention to a manuscript in the Vatican library, the marginal notes of which throw a new light on this question. It is in this light that Father Hocedez now presents the case. **M. Schmaus:** Die Texte der Trinitaetslehre in den Sententiae des Simon von Tournai. This is the first part of a detailed presentation of all the texts of the Sentences of Simon relative to his teaching on the Blessed Trinity. The writer aims to show Simon of Tournai's dependence upon the Fathers, particularly St. Augustine. Also, that the author of the Sentences reflects the thought of his times. **D. O. Lottin:** Notes sur les premiers ouvrages theologiques d'Albert le Grand. The author of this article discusses the early treatises of St. Albert *De Natura Boni* and the *Commentary on the Sentences* of St. Albert and of O. Rigaud.

Revue des Sciences Philosophiques et Theologiques—Vingtième Année, No. 3: August, 1931.

F. Vial: Méconnaissance du temps. An article dealing with the notion and several current theories of time. The author maintains that it is necessary to distinguish between the idea of time and the representation of time: past, present and future. The two are not the same thing. Time is not a body, or a synthesis of the universe (as M. Uchenko holds). It is not pure continuity (Bergson); nor is it a series of instances *sans dure* (B. Russell). Time is not a movement, but its measure. **L. Cerfaux:** Adonai et Kyrios. A continuation of the discussion that appeared in this *Revue* (Feb., 1931) under the title "Le nom divin 'Kyrios' dans la Bible grecque." **I. Mennessier:** Les realites sacrees dans le culte chretien d'apres S. Thomas, 453-471. A continuation of the same question treated in the *Rev. sc. ph. th.*, XX (1931). Here the author deals with consecrations, the objects of cult, its ministers and participants, and the extent of Christian consecrations.

Revue des Sciences Philosophiques et Theologiques—Vingt-et-Unième Année, No. 1: February, 1932.

G. Rabeau: La Logique d'Edmund Husserl. The author notes that the philosophy of Husserl, popular for some time in Germany, is now receiving much attention in France. Examining the logic of Husserl, he finds that it does not always solve the numerous problems its raises. While it may point out methods of solution, it does not dispel all disquietude about the security of the methods indicated. Husserl's doctrine of the transcendental ego smacks of Fichtean idealism, which would scarcely be in harmony with the realism that his method indicates. **L. Foucher:** La notion d'immortalité de l'âme dans la philosophie française du XIXe siècle. Nineteenth century French philosophy was more concerned with demonstrating the immortality of the soul, and with speculation about the manner and nature of its survival, than historians of philosophy ordinarily show. Jouffroy, Maine de Biran, Lachelier, Revounier and others made important contributions to spiritualistic philosophy.

Bogoslovni Vestnik—Année XII, Zv. I: Ljubljana, 1932.

Fabijan: Nauk sv. Auguština o veri (S. Augustini doctrina de fide). The article deals with St. Augustine's teaching on the fullness of personal experience, the two ways of arriving at the knowledge of truth, i. e., by reason and by authority, and next turns to the consideration of the part that reason plays before an act of faith is elicited. **Aemilius Springer:** De mysterio Unitatis Corporis Mystici (in Latin). I. In quo consistat illud mysterium. II. Quomodo illud mysterium in s. Scriptura traditur. III. De hujus mysterii excellentia. IV. Mysterium stricte dictum. V. Similitudinis, quibus unitas corporis mystici illustratur. VI. Adnotationes ad hoc mysterium pertinentes. **A. Odar:** Značaj Zakona v Italijanskem Konkordatu (De matrimonii indole in concordato italico).

Kant-Studien—Band XXXVI, Heft 1/2, 1931.

Ernst Cassirer: Kant und das Problem der Metaphysik. A sympathetic, but critical study of Heidegger's interpretation of Kant, in *Kant und das Problem der Metaphysik*, Bonn, 1929. Heidegger presents very logically the development in Kant's philosophy, but does not present the whole of transcendental idealism. Kant's Schematismus and his transzendentale Einbildungskraft are at the heart of his Analytik, but not of the system as a whole. **Kurt Sternberg:** Aufklaerung, Klassizismus und Romantik bei Kant. Like Plato, Kant lived in three worlds and this constitutes his real greatness and singularity and incomparability. Neo-Kantianism needs to realize this in its endeavor to renew our present-day Kultur. **Justus Meyer:** Kants Philosophie der Lebenserscheinungen. An attempt to recast Kant's thoughts on biology as expressed in the Kritik der Urteilskraft into modern forms. A rather difficult task. **Paul Hofmann:** Das Problem des Satzes vom Ausgeschlossenen Dritten. Notes on the problem of the Excluded Middle as presented by L. E. J. Brouwer. If Brouwer's ideas are accepted the logical foundations of mathematics seem imperiled. Hofmann uncovers the fallacies in Brouwer's reasoning. **Heinrich Scholz:** Ueber das Cogito, Ergo Sum. An interesting discussion of Decartes' cogito, ergo sum in which the author tries to find whether and in what sense it can be considered the first principle of Cartesian metaphysics. **Martin Ninck:** Zur Philosophie von Ludwig Klages. An exposition of the leading ideas in Klages' philosophy of life and spirit.

Kant-Studien—Band XXXVI, Heft 3/4, 1931. This number is devoted to an appraisal of Hegel on the centenary of his death.

Hermann Glockner: Nach Hundert Jahren. Die Problemweite der Hegelschen Philosophie. **Georg Lasson:** Hegel und die Gegenwart. **V. M. Kuiper:** Zum Hegelstudium. **Horst Hoehne:** Hegel und England.

Rivista di Filosofia—Anno XXII, No. 4: Ottobre-Dicembre, 1931.

This number is given over entirely to articles on Hegel and Hegelianism; 1931 was the centenary year of the death of Frederick William Hegel. The savants of the Royal University at Milan have sought to honor his memory. The articles are as follows: P. Martinetti, "The Dialectic Method"; G.

Solari, "The Concept of Civil Society in Hegel"; A. Banfi, "The Philosophy of Religion in Hegel"; C. Goretti, "The Political Wisdom of the Constitution of Wurtemburg"; G. Graselli, "The personality of Hegel"; E. Grassi, "Good balance (L'equilibrio) as the Ideal of the Life of Hegel."

Rivista di Filosofia—Anno XXIII, N. 1: Gennaio-Marzo, 1932.

P. Martinetti: La coscienza morale. The rise of duty and obligation into consciousness. That which gives to the 'ought' its particular value is an act of spiritual creation. All the systems of will and value need to be reduced to the unity of the religious will; in it are differences reconciled and the interior law raised above subjectivity to an objective position. Personal considerations are then thrust aside not as hostile wills but as degrading inferiority. **Eugenio Garin:** La scoperta della coscienza morale nell'etica inglese del '600 e del '700. The moral problem was introduced as a problem of conscience into English philosophy in the seventeenth and eighteenth centuries. Before Shaftesbury, it was unknown; it appeared here and there sporadically, gradually growing in strength. Hobbes made a powerful synthesis, resting his case on the use of reason. Through the Cambridge Platonists, Wollaston, Clarke and Henry More, we come to Berkeley, Hutcheson and Bentham. Butler formulated a definition, *viz.* the approval or disapproval of our reflective reason. Then we come to Hume and Adam Smith. These constitute the foundation of subsequent English ethics. **Ernesto Grassi:** Il platomismo cristiano di M. Blondel. A new criticism of Blondel, leading to the conclusion that his philosophy is above all an ontology, a rigorous scrutiny of being.

Rivista di filosofia neo-scolastica—Anno XXIII, Fasc. IV-V: Luglio-Ottobre, 1931.

Mariano Campo: La filosofia dell'arte di G. Gentile. An exhaustive study of the chief points in the development of the philosophy of Gentile on art. It is a transcendent philosophy of the spirit. **Umberto A. Padovani:** L'Ambiente e le fonti nel pensiero di A. Schopenhauer. The voluntarism of Schopenhauer is anti-rational and pessimistic, the final outcome of the idealistic movement descending through Kant and Hegel. It concludes in an asceticism of radical type, without hope. **Francesco Olgiati:** Leibniz e Blondel. An examination of the doctoral thesis, presented by Maurice Blondel in 1893, in the light of a recent work by the same author on the same subject, *viz.* the *vinculum substantiale* of Leibnitz. Olgiati agrees with Blondel on the profound metaphysical character of this conception, disagreeing in his evaluation of the monads and the theory of pre-established harmony. Blondel aims at setting up a realism, at finding a way to being, through a philosophy of action. **Eugenio Di Carlo:** A quali fonti abbia attinto il Galuppi la conoscenza della filosofia di Kant? An inquiry into the sources of the thought of Galuppi. He had the Latin translation of the works of Kant made by Born; the works of Villers, Degérando, Kinker, Buhle, Destutt-Tracy, and Soave. **Gerardo Bruni:** Catalogo dei manoscritti Egidiani Romani. The catalogue whose publication was begun

in 1930 is here completed. All students of the text of St. Thomas will be interested in this list.

Rivista di filosofia neo-scolastica—Anno XXIII, Fasc. VI: Novembre-Decembre, 1931.

Marino Gentile: Etica e metafisica nel pensiero di Seneca. A communication read at the Congress of the Society for the Progress of Science, Milan, September, 1931. Seneca rejects every form of speculation which has no immediate practical bearing; philosophy is the study of virtue; metaphysics is virtue; thus does he join the two together. **E. Preto:** La posizione di Rolando di Cremona nel pensiero mediævale (read at Milan, September, 1931). A study based on an unedited manuscript, antedating 1250. Little is known of the life of Rolando; but through his works the thought of William of Auvergne was transmitted to St. Thomas. **Francesco Olgiati:** L'Autocoscienze e la dimostrazione del libero arbitrio in San Tommaso D'Aquino (Milan, September, 1931). The argument of St. Thomas for freedom of the will rests not entirely upon the testimony of consciousness to the fact of freedom, known by introspection, but also and principally upon the nature of man; it is therefore objective; man not only knows the object, but knows also himself, and therefore can deliberate about the *rapport* between himself and the object. **S. Vanni Rivigni:** La psicologia averroistica di Taddeo di Parma (Milan, September, 1931). A criticism of the contribution of M. Grabmann to the *Melanges Mandonnet*, dealing with Taddeo di Parma. Taddeo was a staunch advocate of what he thought was Aristotelianism, but which really was Averroism. It was he who imported it into Italy. **Frederico Olivero:** Shakespeare in rapporto alla religione ed alla morale (Milan, September, 1931). The ideas of God, Providence, future life, reverence for the priesthood, spirituality of the soul, love of justice and peace, are traced through the works of Shakespeare, by collecting texts bearing upon them. It is concluded that William Shakespeare was profoundly religious, teaching a high Christian morality.

Elements of Psychology. By James Francis Barrett. Milwaukee: The Bruce Publishing Co. Pp. 419.

This book does not differ greatly from author's *Essentials of Psychology for Nurses.* Some new matter, e. g., a chapter on Reflex Action, has been added.

For the most part the text is well written, but parts of the book lack originality. Dr. Thomas V. Moore's *Dynamic Psychology* is frequently quoted, sometimes at considerable length. The are times when the text is a bit confusing. On page 24 after giving the 'simple reaction time' for various stimuli the author quotes, from Dr. Moore's *Dynamic Psychology*, a paragraph which refers to 'reflex' not 'simple reaction time'. In the chapter Habit he uses the term 'reflex' too broadly though not more so than is found in some modern text books.

The chapters Feelings and Emotions; Habit; Character; and The Psy-

chology of Learning, contain much that is especially suited for beginners in psychology and for students not specializing in the subject.

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Der Seinsbegriff bei Boethius. Mit besonderer Beruecksichtigung der Beziehung von Sosein und Dasein untersucht. By Hermann Josef Brosch. (Philosophie und Grenzwissenchaten. Schriftenreihe, heraugsgegeben von Innsbrucker Institut fuer scholastische Philosophie. LV Band, 1. Heft). VIII u. 121S. Innsbruck: Felizian Rauch, 1931.

This is an original study of the term 'esse' as used by Boethius. The author neglects all mediaeval commentaries going directly to the texts of Boethius, in order to find in what precise meaning Boethius uses the term 'esse.' For this purpose he studies particularly the *Consolatione Philosophiae* and the *Opuscula Sacra*. It is a bit of pioneer work which leads the author to the conclusion that *esse* is to be understood as meaning *essentia*. Boethius can no longer be considered the first pre-Scholastic to make a sharp distinction between *essentia* and *existentia*. If the Middle Ages so honor him it is due to their misunderstanding Boethius. For theology this study is of interest, because Brosch shows that neither in his ethical writings nor in his theology does Boethius identify essence and existence in God. The only case of identification is that of individual essence and form and that of substance and 'essence-predicates.' *Esse* is *essentia*. In this result he agrees with Roland-Gosselin. It would seem that this study was inspired by Pelster's verdict, that Boethius incorrectly understood has had more bearing on the real distinction between essence and existence than Avicenna's 'possible' and 'necessario esse.'

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Doctoris Seraphici, S. Bonaventurae Prolegomena ad sacram Theologiam ex Operibus ejus collecta (Florelegium Patristicum tam veteris quam medii aevi auctores complectens, Ediderunt Bernhardus Geyer et Johannes Zellinger), by Thaddaeus Soiron—Fasc. XXX, Scholae Franciscanae tomus II. Bonn: Peter Hanstein, 1932, Pp. 32.

This newly edited collection of St. Bonaventura's Prolegomena, gathered from his *Opera Omnia* (Quarrachi), deals with the following questions: (I) Materia seu subjectum theologiae; (II) Ortus theologiae; (III) Modus procedendi in theologia; (IV) Finis theologiae; (V) Theologia una scientia; (VI) De relatione philosophiae ad theologiam; (VIII) Disposito ad studium theologiae. The text is exact and clear. Footnotes of source references and some of explanation, are added. The marginal numbers, found at every fifth line, will expedite reference to the text.

The Seraphic Doctor's Prolegomena should be of interest to the theologian as well as the philosopher. St. Bonaventura was both theologian and philosopher of the highest rank, and never one or the other alone. Hence, the question *De relatione philosophiae ad theologiam* should prove to be of especial interest. Philosophy for St. Bonaventura was primarily an *ancilla theologiae*. All knowledge must bring us closer to God. Unless it does this, knowledge is vain. "Qui confidit in scientia philosophica et appreciatur se propter hoc et credit, se esse meliorem, stultus factus est, scilicet quando per istam scientiam sine ulteriore lumine credit, se apprehendere Creatorem; sicut si homo per candelas vellet videre caelum vel corpus solare." (P. 29)

All the sciences by which we arrive at truth were for St. Bonaventura but steps by which we should ascend to a closer union with God. He writes: "Scientia philosophica nihil aliud est quam veritatis ut scrutabilis notitia certa. Scientia theologica est veritatis ut credibilis notitia pia. Scientia gratuita est vertatis ut diligibilis notitia sancta. Scientia gloriosa est veritatis ut desiderabilis notitia sempiterna." It is evident from these words that he who was the *facile princeps* of mystics adopted also their principle, "*Amo ut intelligam.*" The Seraphic Doctor was pious in his philosophy, and philosophic in his piety—always a mystic.

Students of his philosophy and theology should welcome and find useful this excellent edition of his prolegomena.

JOHN SHOLAR.

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Recent Ethics in Its Broader Relations. By James H. Tufts. Berkeley: University of California Press, 1930. Pp. 181-201.

This essay presents a twenty-page outline of ethical theory since the Great War. International tension between nations and the domestic tensions between native and foreign groups and cultures, between classes, racial groups, and occupational groups seem to constitute the more important of the great world issues of our day. French and German writers especially have been moved by the tragic conflicts and bitter experiences of recent years to rethink the relations of state to state and of state to individual. Greater regard for personal autonomy is favored. Studies of group relations strive to guide the achievement of genuine freedom in a highly complex, democratic society such as ours. A more general bearing of comparative ethics upon classical theory is its seeming menace to standards, and its challenge to all moral authority. Such literature but reflects the present temper, a mixture of revolt and daring, loss of faith, and withal, a certain mistrust in the absolute competency of science. Radical theorists, such as Bertrand Russell, insist upon banishing the conception of duty and making our actual desires supreme. A somewhat analogous subjectivity, represented by Professor Perry, approaches ethics along the path of value theory under the motto "Value is any object of any inter-

est." G. E. Moore and some of the French and German writers hold to a scale of values which we apprehend or experience, but do not wholly create. Rickert even claims that the "ought" for our world of knowledge, as well as for our world of ethics, is deeper, more real than the "is." Mention is made of Professor Dewey's radical use of what he chooses to call scientific method applied to ethics. A few vague statements about scientific method and moral values form the conclusion.

JOHN F. FINNEGAN.

The Catholic University of America.

Summa Theologiae Moralis. By B. H. Merkelbach. Paris: Desclée, De Brouwer and Co., 1931. Vol. 1, pp. 756.

Certain modern ethical writers seldom refer to moral theologians without a graphic sneer. Yet these same writers fill volumes with platitudinous generalities and completely avoid numerous specific problems of human conduct. Whatever may be said in disparagement of the "theologians," they have at least covered ground upon which most ethicians fear to tread. Hence, the student of special ethics will find in the writing of moral theologians valuable material for the solution of difficulties about which volumes on ethics maintain a strange and absolute silence. To such a student, the present work, distinguished by its accurate exposition of principles and its eminently systematic treatment of problems, will be a mine of information. Dr. Merkelbach realizes that many theological authors have given undue attention to casuistry to the detriment of a serene and adequate exposition of principles. Some, too, have been content to catalogue the more or less probable opinions of others without a personal re-examination of problems. He has striven to bridge the gap which modern specialization has dug between speculative and practical theology. He has succeeded admirably in fusing his solid and modern erudition with the timeless principles and methods of St. Thomas. This first volume in the series includes all the questions of general ethics and those of special ethics systematically grouped under the virtues of faith, hope and charity.

JOHN F. FINNEGAN.

The Catholic University of America.

La Morale de l'Evangile. By M. J. Lagrange. Paris: Bernard Grasset, 1931. Pp. 250.

A few years ago, M. Albert Bayet, professor at the Ecole des Hautes Etudes, leaving his *metier* of ethician, ventured forth upon the field of higher Biblical criticism. His book, entitled *Les Morales de l'Evangile*, appeared in the collection *Christianisme* published by the notorious M. Couchoud. It was an intended confirmation of the latter's pet theory that Jesus never existed as an historical character. M. Maurice Goguel summed

up the book in syllogistic fashion: Major: every moral system which expresses the thought of a single personage is coherent and free from contradiction. Minor: the moral views expressed in the Gospels have not these characteristics. Conclusion: the moral ideas of the Gospels are not those of an individual, but are a contradictory mixture of views taken from various sources. Our volume is a point-by-point refutation of M. Bayet's exegesis. The eminent patriarch of Catholic Biblical studies points with ease to numerous violations of elementary exegetical rules such as those of giving due regard to the immediate and remote context, and of respecting the literary type from which a detail is borrowed. Thus, for instance, the lesson of a parable (such as the story of the unjust steward) consists only in the conclusion and does pass judgment upon the morality of the actors. M. Bayet's method, like that of the camp-meeting evangelist, consists mainly in a strictly literal interpretation of texts isolated completely from their proper setting. Another procedure is to assume that two supplementary notions are contradictory, for example, that genuine religious and moral feeling is incompatible with external religious rites and ceremonies; then, after citing two series of texts, each of which stresses one of the two complementary views, he jubilantly concludes that the gospels are a hodge-podge of moral ideas. Needless to say, the reply of Father Lagrange is complete and crushing. It is particularly valuable because he resists the temptation of wandering off into theoretical refutation and simply meets false exegesis with true.

The only possible criticism that might be offered Father Lagrange is that he took time to answer such a weak adversary. Still, we may rejoice that flimsy objections served to call forth the luminous views of a master exegete upon certain obscure passages which might be an embarrassment to the Christian ethician.

JOHN F. FINNEGAN.

The Catholic University of America.

Études sur le Problème de Dieu dans la Philosophie contemporaine. By Régis Jolivet. Lyon-Paris: Emmanuel Vitte, 1932. Pp. 240.

In this work Professor Jolivet has written a very interesting and readable study of contemporary French philosophy with particular reference to the problem of God, which, as he states "continues to occupy thinkers." Read in conjunction with his recent work on *LeRoy*, it will give the student an accurate and detailed picture of what conclusions the more important present-day thinkers in France have arrived at in the field of the philosophy of religion.

Jolivet expounds and criticizes in a very thorough-going fashion in this study the philosophies of Léon Brunschvicg, M. Parodi, and Th. Ruyssen. Brunschvicg, as Jolivet points out, is having a very important influence on French thought. Though it in no way reaches in popular extent that of Bergson, yet among professional philosophers his views are held in the

highest repute. Brunschvicg is an idealist and harks back to Kant and Fichte as to his spiritual fathers. He has succeeded in fashioning a spiritualism without the need of a God, a religion he claims that is more consonant with modern needs and thought than is the mediæval theory of the universe and of a Prime Mover. Jolivet examines in a very dispassionate manner the bases of Brunschvicg's philosophy and finds them no less secure than the idealistic sources from out of which they have arisen.

Parodi, well known for his remarkable book *La philosophie contemporaine en France*, essays the rôle of philosopher of religion and arrives at a type of pantheism that does not differ in its large outlines from the views of Spinoza. As Jolivet remarks, after criticizing this point of view in detail, "le principal mérite de Dieu de M. Parodi est justement de ne pas exister."

Jolivet views with evident sympathy the efforts of Ruyssen to construct a philosophy of God, in opposition to the views of Parodi, which goes far along the road to an acceptable theism. Ruyssen brings out two points which cannot be controverted logically; one is that if the universe is to become intelligible for us, we must accept the existence of a first principle, and secondly, unless a Supreme Being exists, the whole spiritual order, and with it morality, falls to the ground. Ruyssen, however, fails to go along to the conclusions to which his reasoning logically leads him, and denies to this Eternal Truth or Thought, whose necessity he recognizes, every note of subsistence and personality.

J. H. R.

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